

# RAILROAD GAZETTE

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## INDEX TO RAILROAD ADVERTISEMENTS.

Chicago, Rock Island & Pacific Railroad.....	305	Chicago, Alton & St. Louis.....	305
Leavenworth, Lawrence & Galveston Railroad.....	305	Hannibal & St. Joseph.....	305
Chicago & Northwestern.....	305	North Missouri Railroad.....	305
Pan-Handle.....	305	Pacific Railroad of Missouri.....	305
Western Union.....	305	Pennsylvania & Ft. Wayne.....	305
Kansas Pacific.....	307	Erie Railway.....	309
Chi., Burlington & Quincy.....	308	Illinois Central.....	310
		Michigan Southern.....	310
		Michigan Central.....	311

For Table of Contents, see Page 298.

## SWITCH SIGNALS.

Mr. Wolf Bender, Engineer of the Austrian State Railway Society, has, since the year 1851, been making many improvements in the system of switch targets. We present this week an illustration of Mr. Bender's latest improvement, which is now in general use on Austrian railways, and which was favorably mentioned in the reports of the Paris Exposition. The target is in the form of a short thick arrow, the faces on either side of the lantern being painted red and white. The faces are concave, and on two sides of the lamp, which is placed in the center, are prism reflectors which cast the direct horizontal rays of light back on the colored faces of the target. The angles of the faces of the reflector and the radii of curvature for the target are adjusted mathematically accurate so that as few as possible of the rays of light are lost.

By this arrangement the engineer is obliged to remember but one system of signals both by night and by day; lights cannot be misplaced, and a fruitful source of accident is avoided. We present the engraving in the hope that it may furnish some valuable suggestions for a similar system on American roads. The idea is one which might be advantageously adopted by all companies using targeted switches.

## Cheap Transportation.

It will be seen upon reference to a comparative statement of freight charges published in our commercial department, that the cost of transporting grain by lake and canal this year has ruled very low as compared with other years. The average freight on wheat for the month of May from Chicago to Buffalo was 5 cents, and from Buffalo to New York by canal was 11.5, making an aggregate of 16.5 cents between Chicago and New York by water. Last year the average lake freight on wheat for May was 5.8 cents, and by canal 13.9 cents, making an aggregate of 19.7 cents per bushel. These figures show a difference in the average charges for May, 1870, as compared with those of the same month last year, of 3.2 cents per bushel.

This reduction in the cost of transportation is due partly to reduced tolls and partly to the sharp competition of the railways for through traffic at Chicago. In addition to the railways running out of that city, vessel owners have had to compete with the propeller lines which run in connection with the Erie Railway. This line did a very heavy flour and grain business during the months of April and May, which was owing to the early opening of the lake and to the great scarcity of canal boats at this end of the canal during May. The Erie Railway flour and grain business, alluded to, was brought from Chicago to Buffalo by propeller, and carried thence to New York by rail. The average through rates for May on wheat by this route was 21.4 cents per bushel, and 19.7 on corn. The highest published rate on wheat was 23½ cents, and the lowest 19 cents. The difference between the average rates by the propeller and rail route, and the average by lake and canal, was 4.9 cents in favor of the latter.—*Buffalo Commercial Advertiser*.

—The Montgomery (Ala.) *Advertiser* says it is estimated that no less than 14,000 actual labors are at work on the different railroads in that State.

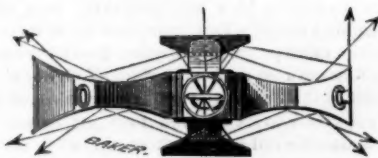
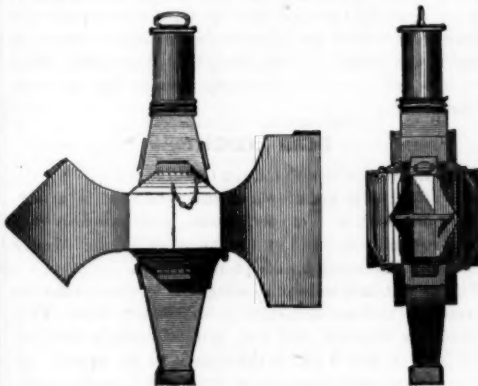
—A Union passenger depot is to be erected at Columbia, S. C., by the South Carolina and the Charlotte, Columbia & Augusta Railroad.

## Contributions.

### HINTS ON TRACK REPAIRS.

BY WILLIAM S. HUNTINGTON.

It was stated in a previous article on renewing ties that a small tie has a heavier load to sustain than a large one, and that when several small ties are laid together, they will, under some circumstances, settle an inch or more in excess of larger ones placed adjoining them. This may appear absurd to many railroad men, especially to those who have had the good fortune always to have been employed on roads well tied and provided with a heavy rail. There are a few roads in this country so well tied that there is barely room between them for tamping, being in fact almost a solid bed of timber, on which is laid a rail of the heaviest pattern; and men who have had no experience except on such roads may consider some of our statements rather broad. Unfortunately for the railroad community, however, and the community at large, there are but few such roads in the country; and those whose experience has been on roads



Austrian Switch Signal.

where ties are laid very scattering and with a light rail will have no difficulty in finding ample proof of my statements, on giving the matter a careful consideration.

### SHIFTING IRON.

When iron gets badly broomed at the ends, it is taken to a shop and repaired by welding on a piece of bar-iron to level it up to its former shape. A great deal of iron remains sound and in good condition throughout its entire length, after the ends have become battered so as to render them unfit for use; and it is a matter of economy to repair such rails, and put them to further use, rather than to put new iron in their place, as iron that is well repaired and properly replaced in the track will answer nearly as well as new iron for a long time. It requires considerable care, however, in replacing it in the track, to make it pay to use repaired iron. It is frequently the case that the end of a rail that has been repaired is placed next to one that has not been worn or battered sufficiently to require removing. In such cases the ends of the repaired rails, being higher than the adjoining ones, are exposed to a severe pounding and are soon spoiled, so that it is not always that repaired iron pays expenses. In laying repaired iron, what are known as step-chairs should be used. These may be made of any of the ordinary styles of cast chairs, but with the rail seat on one side lower than that on the other, so that rails varying somewhat in height may be placed together and yet form a true and even joint, preventing all unnecessary wear or pounding of iron. The lips of step-chairs should be made low and both sides alike, so that

they may be used either side out, or on either side of the track, as occasion may require. It is best also to provide chairs of various patterns, with reference to the height of the step, that, varying slightly, they may accommodate any variation in the height of rails. The expense of furnishing these chairs is but a trifle compared to what they save in the wear of iron, and it is economy to use them even when the variation in the height of the iron is very slight.

If, in replacing iron, the rails can occupy exactly the same place as those taken out and leave the gauge correct, it is better to fill the spike-holes with sand and drive the spikes in the old holes. This will give the spike a firmer hold in the tie than if driven in a new place, and also no hole is left in the tie for water to enter, which would hasten its decay. A great many ties become so far decayed as to require removal long before they would if properly treated in this respect. The various operations of track repairs often render it necessary to draw spikes from some of the ties frequently. If these are driven in new places every time, the tie soon becomes full of holes, which fill with water. Thus the timber is softened under the rail and soon rots, while all other portions remain sound. It is best in all cases to drive spikes in the old holes, after filling or plugging them up, unless there is some good reason for driving them in a new place, and in that case the old holes should be tightly plugged to keep out water.

In putting new iron in the place of old, it is the custom with many to draw the spikes only on one side of rail. Then, if the iron is of a different pattern from that which is taken out, the gauge will be altered more or less. In some cases this may be done to good advantage, as it will save considerable labor and, also, the damage to ties and spikes which is the result of carelessness in drawing. As old track is usually wide gauge if the new rails are wider on the tread than the old ones, the gauge may be made correct or nearly so by drawing the spikes on one side only; but it usually disturbs the gauge to such an extent that it is best to draw all the spikes. Sometimes it will do to draw the spikes on one side of the rail on one side of the track, when it will be necessary to draw them all on the opposite side. It is not worth while to be too particular about saving labor in this work, to the sacrifice of a true gauge. Only a few days since, the writer passed over several miles of track on what is considered a first-class road, where new iron had lately been laid, which was a good ¼ inch too narrow gauge. The consequence is, the iron is wearing rapidly and, if not attended to soon, will be worn out soon. By using iron of some other pattern, with a broader base, in the same way, it would be ¼ an inch or more too wide; and, judging from the practice of some track men, (and not a few of them), they are not aware that track iron is made of more than one size or pattern, but believe that all rails are alike.

In renewing iron, as in laying new track, curving is often neglected. A car load of iron is run, perhaps, hundreds of miles from where it was loaded, to the spot where the iron is to be used, when it is distributed from the car and laid with no regard to curving or straightening. If the iron is to be laid on straight line, this plan is well enough, care being taken to straighten such rails as have been kinked in handling; but if it is to be laid on a sharp curve, it is better to unload it carefully at the end of the curve, and then it can be properly curved and laid from the iron car, or a hand car, as in laying new track.

In relaying iron that has been taken from the track and repaired, it frequently happens that iron that has been in use on a curve is relaid on straight line, and in such cases the curve should be well taken out of it before laying it. At other times it is desired to lay iron that has been taken out of straight line on curves, and this is often done without curving it. This matter does not generally receive the attention its importance demands. Iron is taken out for repairs and sent to a shop, which may be miles away, and when it is ready for use again it is likely to be sent to some other part of the line, miles from where it was taken out. As there is no

remedy for this, it is best to examine all iron coming from the rail shops closely before laying it, and see that it is put in proper shape. It is an expensive operation to take iron out of the track, get it to the shop, have it repaired, and get it into the track again; and in relaying it, it is necessary that it be well done or it will not pay. By a careful estimate of the Iron and Steel Association, it appears that the annual wear of railroad iron in the United States amounts to enough to lay 360 miles of track, and, no doubt, fifty per cent. of this wear may be saved by proper care and attention in laying it, and by giving it proper care after it is laid.

The expense of maintaining the permanent way, is one of the greatest obstacles in the way of making any railroad pay; and this expense on some roads is more than double what it need be, if proper measures were taken to prevent all unnecessary wear to track iron.

I have now called attention to some of the most important matters connected with the general treatment of track iron, which are overlooked by the mass of section masters and railroad managers generally, or, if not entirely overlooked, have not been considered of sufficient importance to demand serious consideration.

#### SNOW AND ICE.

In some sections of the country the expense of removing snow and ice from railroad tracks is enormous, and as the matter is usually attended to by section men, and often charged to the account of track repairs, it may be proper to offer some hints on the subject.

The clearing of snow from railway track has not received sufficient attention from the managers of most of our roads in snowy localities, and track men are in a great measure powerless in this matter without the co-operation of the Superintendent and Master Mechanic. The last named official is usually on hand in case of a severe snow storm, with a huge snow plow, constructed in his shop, after his plan, requiring the united efforts of from three to six locomotives to move it through enormous drifts of snow, or through the deep cuts that are filled with the glistening white crystals; and when once the monster, with wings extended, has passed over the line, he returns to his comfortable stall at headquarters to be petted by every mechanic who had the slightest to do with his fabrication, and to receive the praise of him of whose brain he is the offspring. There is hardly any first class railroad in snowy parts of the country but is provided with some kind of a "big snow plow," and as a general thing they answer a very good purpose for removing heavy drifts of deep snow; but they leave a large quantity in the flange-way which soon becomes packed and frozen into solid ice, which is a great obstruction to trains. What is left to pack down in the flange way is neglected by the Master Mechanic and those under his charge, and track men are left to their own resources to remove it, and frequently, if a section master applies to the foreman of the shop for aid in perfecting or repairing some implement for clearing ice from the flange, he is insultingly turned off with the reply that, "the big plow has been over the road and that is sufficient."

When the first railroad was built in this country, it was asked: "Can we run it in winter, on account of snow?" It was a question not easily answered then, but after a few years' experience, it was demonstrated that with proper appliances, snow would not seriously interfere with railroad traffic, or at least, that the difficulty was not an insurmountable one. Years later, some very good snow plows were put in operation on some roads, but even the best of them were not adopted on roads other than where they were built, and contrived, and there is not to this day any first-class, standard snow plow in use. The reason of this has been ascribed to the great reluctance manifested by Master Mechanics generally to adopt each others' improvements. However this may be, it is certain that no thoroughly efficient snow-plow has ever come into general use, and of all improvements of a mechanical nature, pertaining to railroads, the snow plow may be said to be in the rear. There seems to be at least two good reasons for this; one as stated above, and another that the article is needed only a portion of the year, and it is somewhat in the condition of the roof of a certain man's house: When it was fair weather it needed no repairs; and when it rained he could not repair it. So with building a snow plow: they cannot think of it in hot summer weather, or in pleasant weather in autumn; and when they are up to their ears in snow in winter, it is too late to commence building one, as winter will be over soon and they will not need it. This is the excuse on some roads, year after year, for not building a first-class snow-plow; and winter after winter their trains are lost in some severe storm and not heard from for days at a time. When the snow is all gone in the spring, the managers conclude they have had an unusually hard winter and probably will never see the like again and will not need any snow-plow another winter, so they conclude not to build one. This is the practice with many companies year after year to

their great pecuniary disadvantage, but as the "snow-plow" will be the subject of a future article, not necessarily connected with track repairs. I will come at once to the work of clearing track of snow and ice, in which track men are especially interested.

When the flange-way of the track becomes filled with hard snow, which soon forms into ice, it offers great resistance to passing trains, and the wood pile suffers to the extent of a great many cords, or their pile of coal is correspondingly diminished, and all because the track men do not keep the flange-way clear. This important matter is often neglected by track men, who as a general thing, imagine that if the surface of the rail is clear, and passenger trains make time, and if freights are not very much behind, that the track is all right, so far as snow and ice are concerned. They are not aware that the passenger engine that has passed them with such apparent ease is using a large amount of fuel in excess of the ordinary quantity, or, perhaps they have not noticed that the freight trains are running with several cars less than their usual number, on account of the flange being full of snow and ice. It is no excuse for to-day that the flanges were cleared out yesterday; for when there is snow on the ground, it is constantly sifting along and drifting into the flange-way, where it is soon packed into ice by passing trains, and makes hard traveling. There are a few roads in the country where some sort of an apparatus attached to the front of the locomotive or under a car is used for clearing flanges as the train passes along. This is a relief to track men, and, if they work well, are equally beneficial to train men and profitable to the company. There is, however, a great obstacle in the way of operating such appliances successfully, on account of the liability of the scraper to catch on chairs, frogs, crossing-planks, etc. There is in use of some roads a very efficient contrivance that can be raised on approaching crossings, etc., but owing to the difficulty of raising it at the proper time, in case of a blinding snow-storm, and the mischief it causes if it is not raised at the proper time, it has not come into general use. In most cases, track men cannot make better use of their time in winter than in clearing the flanges, and by doing this thoroughly they may save the company a handsome sum in the expense of fuel.

#### DEAD WEIGHT.

TO THE EDITOR OF THE RAILROAD GAZETTE:

The editorial in your issue of the 11th inst. is a suggestive one, and, as you say, should, and probably will be, thoroughly discussed at the meeting of the Master Mechanics' Association in September next.

The great trunk lines in seeking for business offer to travelers better accommodations and faster time. This necessitates roomier cars and proportionately stronger ones, both of which add to the weight to be moved. A few years ago passenger cars weighed ten to twelve tons; now they weigh from eighteen to twenty, and palace or drawing-room cars as high as thirty-three tons, which last, at the hind end of a long train, moving at speeds of from 25 to 45 miles per hour, require heavier engines. We have thus crawled up from engines of eighteen and twenty tons to those of thirty to thirty-five tons, or from  $3\frac{1}{2}$  tons per driver to six or seven tons per driver. In many instances the rail has not kept up with the demands on it, which accounts just now for the demand for steel rails, in the vain hope that by this we can increase the weight per wheel.

A wagon weighs eight or nine hundred pounds and is loaded for a long journey with, say, four thousand pounds, or four and a half of load to one of wagon. A stage weighs fifteen hundred to two thousand pounds, carries twelve passengers who, with baggage, etc., weigh at least thirty-five hundred pounds, or two of load to one of wagon, and this is taken up steeper hills, and over infinitely worse roads than the poorest railroad in the world. In cities or towns a ton of coal, two hogsheds of sugar, or five bales of cotton are common loads. This is about three of load to one of wagon. The power necessary to move these loads is say, 350 lbs per ton, or one pound of power to six of load. With a wagon loaded as above, say 4,000 lbs, making with wagon 5,000 lbs, there is frequently exerted 2,500 lbs, or two of load, to one of power. On any railroad, with grades not over 50 feet per mile, the proportion that load bears to the power exerted is about 55 to 1, and in passenger trains, where the speed is kept up down the hills, somewhat less. Thus while wagons have less dead load in proportion to paying, the character of the road absorbs the power one hundred fold.

Cars are built heavy, to get them strong enough to withstand the severest shocks they will ever be likely to receive in ordinary business. There is thus always a surplus of strength, but at the expense of weight. On a very narrow gauge road, say 24 inches, this weight could be reduced to its minimum, or about the proportion of wagons, say three or four of load to one of wagon. Ex-

perience has given about the weight necessary to make a substantial freight car. There is, therefore, but little difference in them as made by different roads, weighing as they do about 16,000 lbs, and they are loaded to the same weight, thus making one of wagon to one of load. The general usage, however, at present, is to load from ten to twelve tons, and sometimes, by mistake, fifteen tons. This is the practical method of reducing the proportion of dead to paying load, and is, possibly, one of the reasons why engineers complain of some trains pulling harder than others of the same number of cars.

The proportion of dead to paying load on a passenger train will stand about as follows:

Baggage car, fourteen tons; three passenger cars, 18 to 20 tons each, fifty-five tons; sleeping cars, from 22 to 33 tons, say twenty-five tons, making a total of ninety-four tons.

The capacity of the above train is for about two hundred passengers at 150 lbs each, say fifteen tons of paying load. This gives a proportion of a little over six to one. If the cars are not as full as this, which is frequently the case, the proportion rises, so that in a year's business it often stands at twelve or fourteen to one, as is easily seen by any one who takes the trouble to look into it.

A trunk line receiving through cars from connecting roads requires heavy engines to get the power and adhesion to pull them at the required speed. The adhesion of an engine under the most favorable circumstances, on a level, is only 600 lbs per ton of weight on drivers, and ordinarily but 450 pounds; in misty or frosty weather it falls to 150 lbs, so that an engine with twenty tons on its drivers has usually 9,000 lbs available for adhesion. When the tractive force of the engine is in excess of the adhesion, the engine slips. Increasing the size of the cylinder from 15 to 16 inches, other sizes being constant, necessitates an increased weight of drivers of, say, three to four tons, as the tractive force is raised from 82 lbs to 94 lbs for every pound pressure in cylinder. Reducing weight on drivers or increasing size of cylinder gives no increase in the aggregate work of engine, but does entail the use of sand and is some trouble to the engineer.

The problem of reducing the weight per wheel, and not impairing the efficiency of, at least, passenger engines has yet to be solved. The Fairlie is promised as that solution; but it has yet to be proved whether a six-wheeled connected, in fact, two six-wheeled connected, engine can get up the speed to make these fast runs. It has been the opinion, liable to change however, that parallel or side rods are great absorbers of power at high speeds. The aggregate weight of engine is not decreased, but the weight per wheel is, and while more wheels strike low joints, they do so with decreased weight. S.

#### RAILROAD CURVES.

KALAMAZOO, Mich., June 20, 1870.

TO THE EDITOR OF THE RAILROAD GAZETTE.

In your paper of April 16 is an article on the elevation of the outer rail on curves, upon which subject I ask the privilege of advancing some theories, founded on experience. As self-protection is the first law of nature, safety in all projects and enterprises may be considered of the greatest importance; and to neglect any opportunity to enhance it, or in any way to relax our energies in that direction, is simply criminal. Among the improvements of the present day railroad transportation may be considered the most important. Yet it is subject to serious catastrophes from apparently slight miscalculations.

I will in this communication confine my remarks to the elevation of the outer rail on curves. I disagree with the *Manufacturer and Builder* in certain points, which will in due time appear. There are two forces which operate to cause the wheels of a train of cars in motion to press against the outer rail on curves. One is the centrifugal force; the other the tendency of the wheels, being of equal circumference, to move in a straight line. The system of coning wheels I believe to be impracticable, and will say no more on that subject. The elevation of the outer rail tends in two ways to counteract the two forces above mentioned. One is, the approximation of centrifugal force to the plane of the surface of the track; the other, the assistance gravity renders in diminishing the pressure on the outer rail by the exertion or its influence in the opposite direction. Now, as it is impracticable to have on the same road one track for a fast train and another for a slow one, we must, as was said by the *Manufacturer and Builder*, adopt a plan to reconcile this matter in as consistent a manner as possible. Where difficulties of this kind arise, if we must err at all, let it be on the side of safety. The *Manufacturer and Builder* says that a track elevated on the outside sufficiently for perfect adaptation to fast trains would be unsafe for slow trains, on account of the tendency of the inner wheels to climb the inner rail by the force of gravity causing them to slide in that direction. I apprehend

no danger from this source. Experience convinces me that the tendency of the wheels to move straight ahead is sufficient to overcome every force brought to bear to press them inwardly unless the outside is higher than necessary for fast trains. Gravity alone would not slide cars to the inner rail, were the other elevated to an angle of fifteen degrees, which is about fifteen inches. The truth of this will be apparent if we imagine ourselves riding down hill on an iron plane of that inclination, on an iron-shod hand-sled. The force brought to bear to move the wheels inwardly, by the power of the locomotives tending to straighten the train, is something in favor of the position that there is difficulty in regulating curves for all trains; but let it be understood that as the curvature increases, so does the tendency of the wheels to go straight ahead, being in this respect a self-regulator. As I before remarked, if we have to err at all, let it be on the safe side. If tracks cannot be adapted to all trains, and inconvenience must attach to one or the other, let it be the greater to the freight train. Better for a slow train to leave the track on the inside than a fast train on the outside of the curve. In conclusion I will give a rule for elevation of the outer rail, that, both theoretically and practically, I believe to be correct, and feasible for all trains: For each degree of curvature, let the outer rail be elevated five eighths of an inch. An eight degree curve would thus be elevated five inches, and all others in proportion.

S. R. WHEELER.

## BALTIMORE AND THE WEST.

Monthly Meeting of the Baltimore & Ohio Railroad Board—Speech of President John W. Garrett.

We copy the following account of the last monthly meeting of the Board of Directors of the Baltimore & Ohio Railroad Company, and the speech of its President, from the Baltimore Sun of the 10th instant. The speech will be found especially interesting to Western men:

The regular monthly meeting of the directors of the Baltimore & Ohio Railroad Company took place at Camden Station on Wednesday last, the attendance being unusually full.

The Committee on Finance reported a resolution instructing the erection of a first-class hotel at Cumberland, upon the land heretofore purchased by the company. After explanations regarding the early completion of the Pittsburgh & Connellsville Railroad, and the large accessions of travel then anticipated, the resolution was unanimously adopted.

It was stated that it is designed to erect a hotel of superior character, which will prove alike attractive to travelers on the Baltimore & Ohio and Pittsburgh Branch roads.

The Committee on Finance also recommended a subscription of one million dollars to the stock of the Valley Railroad of Virginia.

In view of the great importance of this enterprise to the city of Baltimore, and of the expectation that with this large aid, combined with the \$1,000,000 subscribed by the city, the company can at an early day proceed with the construction of their work, the resolution received the unanimous approval of the board.

The President stated that Mr. S. H. Dunan had been the Acting Auditor since the 1st of January last, and had fulfilled the duties of the office satisfactorily. The President then nominated Mr. Dunan as Auditor, and upon motion the nomination was confirmed.

A communication from Messrs. John T. Ford, Horace Abbott and Charles J. Baker, committee on behalf of the Union Railroad Company, was presented to the board.

The committee desire the Baltimore & Ohio Railroad Company to take into consideration the propriety of accepting the rights secured under the amendment of the charter and the substitute ordinance relating to the Union Railroad Company of Baltimore. The communication was referred to the committee of finance.

## MR. GARRETT'S ADDRESS.

After the transaction of the regular business, the President addressed the Board as follows:

Gentlemen: Since the last meeting of the Board the President has made an extended tour, in connection with the interests of the company, through the West, embracing Pittsburgh, Connellsville, Uniontown, Sandusky, St. Louis, Louisville, Cincinnati, and the intermediate points.

At Pittsburgh a degree of enthusiasm and interest has been aroused regarding the Pittsburgh & Connellsville road that augurs very extraordinary results. These, connected with the great petroleum oil trade of that city look to the transfer of a large portion of it to Baltimore upon the opening of that road. There are other great interests that anticipate, from the tariffs that will be fixed by this company, a change of their business from New York and Philadelphia to Baltimore.

The prospects immediately upon the opening of the line for a very large business are remarkable. The city of Pittsburgh is, as you all know, a great and prosperous community, but not as great and not as prosperous as it would have been had it heretofore realized the advantages of railway competition. Tariffs have been so adjusted, as the citizens of that city alleged, that the petroleum oil traffic, which should naturally find its outlet at Pittsburgh, has to the extent of more than one-half, been driven to Cleveland. They think that business, to a large degree, can be restored to Pittsburgh, and transferred, through the Pittsburgh & Connellsville road, to Baltimore.

In passing over the line of the Pittsburgh & Connellsville road it was very gratifying to note that the country,

which is rich in mineral, manufacturing and agricultural resources, already furnishes for the sixty miles of its main line and for its Uniontown branch of twelve miles, which are now in operation, a continuous, large volume of local traffic. And this heavy traffic exists, whilst Uniontown and Connellsville and the adjacent country are suffering under the disadvantage of being compelled to make a detour 130 miles, viz: westward to the neighborhood of Pittsburgh, and thence east to reach tide-water.

The people through that country are more full of excitement and interest on this subject than I have ever witnessed in connection with any similar enterprise in other sections. They look for an immediate transfer of a great and increased business to Baltimore. The older members of this Board will remember that prior to the construction of the road from Pittsburgh to Connellsville, Westmoreland, Fayette, Greene, Somerset, and other large and rich counties of Pennsylvania, transacted their business with Baltimore, and that the construction of that road from Pittsburgh eastward caused even that trade, which was natural to Baltimore on account of the railroad facilities thus furnished, to go westward to the Pennsylvania Railroad, in order to avoid the costly transportation of the turnpike.

Thus Baltimore lost a portion of its business with Western Pennsylvania. That business *en masse*, will be restored to Baltimore with the large accretions resulting from the progress of the country. At this period, in addition to eastern shipments, fifty car loads of freight per day are sent from the Pittsburgh & Connellsville road over the Pittsburgh Fort Wayne & Chicago and other roads to the West, showing the great strength of the local traffic of the line.

In Pittsburgh the anxiety is also extreme for a new route from Pittsburgh to Chicago, to be independent of those roads which are in the interests of and controlled by the Pennsylvania Railroad Company.

It has been stated heretofore that the Pennsylvania road and its allies had so monopolized the various avenues leading from Pittsburgh that it would be impossible to obtain a route for a first-class line from that city to the West; but Mr. Latrobe, the Chief Engineer, and Mr. Hughart, the President of the Pittsburgh & Connellsville Company, and a number of eminent citizens of Pittsburgh joined in expressing the conviction that a line existed, commencing at a point on the Pittsburgh & Connellsville road, in the vicinity of the city, and extending through a depression in the ridge of the peninsula on which Pittsburgh is situated, which would offer a convenient, economical and desirable outlet.

During our visit the officers of the company examined the location, and are entirely satisfied that it is an admirable line for the commencement of this great route to the West. In order to prevent claims or occupation by other interests, the Pittsburgh & Connellsville Company, having the right under the charter, has already located and secured this important line.

In going farther West, every chief town throughout the entire distance—in Ohio and in Indiana—manifested equal anxiety and interest for the construction of a new and independent route to lead directly to Baltimore and to be controlled in the mutual interests of that region and of this city. Chicago now recognizes, as the whole lake region now sees and appreciates, that a great sea front has grown rapidly to a position of great usefulness at the head of the Chesapeake—a city full of commercial strength and economical power, which are based upon permanent and immense geographical advantages. They now recognize that to which their attention had not until recently been practically called, the fact that if Baltimore be supplied with proper outlets to Europe, that there is no reason why the whole commercial, agricultural and manufacturing interests of the West shall not have the advantage of the economy—of the great fact that such a line will offer to Chicago, as the central point of the Northwest, a line of railway at least 150 miles less in distance to the seaboard at Baltimore than the average distance from Chicago to New York by the three great routes now used, viz:—The New York Central, the New York and Erie, and the Pennsylvania Central roads.

Under these circumstances, not in the interests of Baltimore, but as a matter of clear necessity to maintain their own position and assure their own progress by offering to the regions of which they wish to become the seats for commercial interchanges the cheapest facilities and consequently the best net results, western cities are looking with renewed interest, indeed, with a new interest, upon Baltimore as their great objective point on tide water.

And there are other reasons of a most striking character and of most marked significance that cause the opening of a line at this time to attract such great attention. It so occurs that under the peculiar financial system of the Northern railways, they have continued to make stock dividends, and by various devices and processes, enormously enlarged their nominal capitals. To illustrate: The Pennsylvania Railroad Company has recently leased the Pittsburgh, Fort Wayne & Chicago road on terms by which, after the capital of the latter had previously been exaggerated by stock dividends, it agreed to pay 12 per cent. on that exaggerated capital, and that in connection with this agreement a stock dividend of 70 per cent. was made in order to reduce the huge twelve per cent of the agreement to an apparent rate of 7 per cent. But striking as is that enormous exaggeration of capital, which has swollen the apparent cost, \$70,000 per mile, the exaggerations of the capitals of the lines constituting the connections of the New York Central road are far greater. These prodigious costs are shown, whilst it is a significant and peculiar fact that after leaving the eastern section these roads are built through great prairies. There are single tangents of upwards of seventy miles—frequent straight lines, where the horizon is the only boundary of vision. The whole country in the vicinity of the lakes presents an almost level surface, and you have a region that invites the construction of railways at the lowest possible cost. I have no hesitation in saying, from my examination of the sub-

ject, and from the conclusions of the professional men who accompanied me, that a first-class line can be constructed from Pittsburgh to Chicago at a cost not exceeding \$20,000 per mile, exclusive of equipment. Those great interests recognize that a combination of equal facilities, whilst representing a cost and capital of but one-third on which to make dividends that such a line, built in connection with that city, saving in reaching the seaboard 150 miles of transportation, working with the Pittsburgh & Connellsville and Baltimore & Ohio roads, which have coal upon their lines, furnishing fuel at the minimum cost—those interests recognize that such a line cannot fail to add largely, through economies in transportation, to the wealth and prosperity of the West. That whole region is aroused to the necessity of building a line that will present such economies and advantages. The intermediate towns and cities propose to subscribe hundreds of thousands of dollars to the stock of such a line. Their anxiety is intense for a direct road to Baltimore, and the probabilities are that subscriptions of parties interested between Pittsburgh and Chicago will furnish a large portion of the capital required for the construction of the road.

Chicago, as all are aware, perhaps exemplifies the rapid progress of American communities to a greater extent than any other city in the West. It has looked to the development of great lines of railway. It has struck for distant regions. It has opened communication with those distant regions so that commerce should centre at that point as a great entrepot; and now to maintain its strength of position, as the advantages of this port are becoming developed and known, it is necessary for Chicago to join hands with Baltimore in order to assure a continuance of its progress. Our city must continue to offer large and liberal arrangements, and give to railways every facility practicable.

In Chicago you find railroads in every street, where required for the economies of business, and the privilege of using locomotives general in all portions of the city where heavy business is transacted. You will find—and this point is connected with an important subject now being considered by this board—that that city has an immense commerce passing upon the Chicago River. It was found that that commerce passing in vessels at all hours and in great numbers, obstructed the use of the streets for the population and injuriously affected business interests. The draws of the bridges across the river were from necessity frequently open. The city met the difficulty by tunneling that river. You now see a magnificent stone tunnel under that stream, upon which an immense commerce floats, whilst the tunnel furnishes without charge its valuable conveniences and advantages.

It will be clear to all who examine this subject and study cause and effects that when cities provide the largest facilities, afford the greatest freedom, and insure the greatest economies for the transaction of business, they do that which will to the greatest extent advance their interests and increase their wealth. The liberalities of great cities to railways are simply acts of enlightened selfishness.

You find obstructions relieved and facilities freely given in Chicago. As a result, you see capitalists select Chicago for investments in real estate at enormous prices; and every freedom, facility and advantage granted to promote commercial interests by municipal authorities leads to that effective and attractive condition of business which commends it from distant points, and creates wealth and power.

Passing from Chicago to St. Louis, Baltimore reaches its own parallel, and affords for that great and progressive city the shortest and most direct route to the seaboard. Through the Ohio & Mississippi road, and its connections from Cincinnati, the Baltimore & Ohio road, presents a line 235 miles less distance to Baltimore than the average distances by the three trunk lines used from St. Louis to New York. That city, to maintain and increase her commerce, must also avail of the vast economies of the route to and of the port of Baltimore. St. Louis suffers from the large cost and difficulties of transfer over the Mississippi River; but it is believed the magnificent bridge now being constructed there will relieve this obstruction to her commerce and greatly advance her prosperity.

Louisville, to assure her progress, must also be bound in the strong bonds of mutual interest with Baltimore. That opulent and splendid city, by using Baltimore as her port for foreign commerce, commands a geographical advantage for the regions whose commercial interchanges can be attracted by her merchants, as compared with the average distance of the lines of railways to New York of two hundred and four miles.

The interests of Louisville have also been impeded by the large cost of transfer over the Ohio River. The contrast has been presented of that which has so rapidly built up the commerce of Baltimore, viz: The acceptance as its proportion by the Baltimore & Ohio road for 383 miles of service of twenty cents per 100 pounds, when requisite to command the trade. By this means grain and flour, provisions, and cotton and tobacco, and all Southern and Western products are attracted to this port, and thus our foreign and coastwise steamers are furnished with abundant and profitable cargoes.

The comparison and effects on trade can be appreciated of the charge of eight cents for one mile and twenty cents for three hundred and eighty-three miles. But Louisville has completed her fine iron bridge over the Ohio, and it is expected will soon so avail of its advantages as to relieve its trade from this serious embarrassment.

For Cincinnati the advantages are most striking. The average distance in favor of Cincinnati in communication with Baltimore, as compared with the three great lines to New York, is 240 miles. Can it be possible that, with such immense geographical advantages, with its unequalled piers and fire-proof warehouses, furnished without charge for foreign steamships, with its cheapest and enormous facilities for transportation to and from the West—can it be possible that, if Baltimore will only continue her vigor and enterprise, will furnish additional

lines of steamers to Europe—that the business of all these vast regions will not be attracted through their interests to Baltimore instead of to New York? Can it be possible that, when more than two hundred miles of land transportation can be saved in the interest of the farmer and the consumer in the West, this great advantage will not be availed of?

The Queen City will yet reach its highest prosperity command increased trade through the use of its shortest and cheapest outlet to the ocean. It could thus compete with any Western city, and its situation in relation to the trade of great Territories would be superior and impregnable. We said to her citizens that Baltimore had long recognized the strength of Cincinnati; that year after year the preceding administrations and the present administration of the Baltimore & Ohio road had continued to spend its capital without net result in constructing the shortest line between the cities, until now the company has upwards of \$10,000,000 invested in the line from Grafton to Cincinnati. Eight millions of dollars have been invested in the Parkersburg branch, a million in the bridge at Parkersburg, connecting the Marietta & Cincinnati road with the Baltimore & Ohio, and a million of aid has been extended to the Marietta & Cincinnati Company.

I called the attention of our friends in Cincinnati to the fact that the city of Baltimore, the largest proprietor in the Baltimore & Ohio road, had aided the company by granting it increased riparian rights at its marine terminus, Locust Point, and that the company had built great piers, extending six hundred and fifty feet into the river, with a depth of water sufficient for the largest steamers; and that the Baltimore & Ohio Company tendered these grand and costly piers to all those foreign steamship enterprises without charge; that these great facilities—finer than any on the American continent—were offered by the Baltimore & Ohio Company to attract trade to Baltimore, and the result was that every foreigner who visited our city was struck with these facilities, and left Baltimore convinced that its future was simply a matter depending upon the enterprise of its citizens, and that the greatest commercial prosperity awaited it if this liberal and enlarged policy continued to be pursued.

I found upon examination that the work upon the bridges over the Ohio river, which has been a subject of so much anxiety and difficulty, was rapidly approaching completion; that on the 15th of this month the three great piers for the wide spans at Parkersburg would be completed and ready for the superstructure, and I am happy to announce to the Board that the iron work has been prepared, and that in the course of a few days the erection of the superstructure will be commenced.

At Benwood similar progress had taken place, and the river piers for that bridge will be completed in a few days.

The last difficulty in connection with the right of way for the approaches has also been removed within the past week.

A great increase of business will result from the completion of these bridges.

The greater attention attracted to Baltimore has already caused a large increase of business from Ohio. Within the past six months the territory between Cincinnati and Indianapolis, which did not previously use our port, has forwarded \$9,000 barrels of flour.

The business of the Lake Erie Division shows an increase of thirty per cent., and the revenues of the Baltimore & Ohio road and its branches for the month of May, notwithstanding the alleged depression of trade, show an aggregate of \$1,022,863.01.

The enterprises in which the company is engaged are very costly, but the fruits justify the additional debt which the company is creating.

Since the last meeting of the Board a change has taken place in the position of the company in the city of Washington. That change will justify the action this company has uniformly desired to adopt, and enable it to press the work on the Metropolitan Branch road to completion at the earliest practicable day. The Board is doubtless aware that after the protracted litigation, after the gross misrepresentations, after the daily misstatements of a portion of the press of Washington, the Baltimore & Ohio Company had its rights affirmed in the Supreme Court of the District of Columbia by the unanimous decision of that bench. This decision affirmed fully the correct action of the Baltimore and Ohio road throughout, and maintained its rights as asserted by it regarding both the Washington and the Metropolitan tracks within the city of Washington. The gentleman recently Mayor of Washington is responsible to the citizens of that community for at least a year's delay in the construction of the Metropolitan Branch. His opposition, based upon views so absurd, and misrepresentations so gross, apparently created such a feeling in a portion of that community as to cause this company to decide that it would be unwise to make larger expenditures until its rights were properly adjudicated. These rights have been assured, and the people of Washington have doubtless seen and appreciated the folly of the opposition of the Mayor. His removal from office, and the emphatic condemnation of his course thus indicated, will doubtless cause a restoration of mutually advantageous relations between the company and city and citizens of Washington. Without asking a dollar of contribution from the overburdened taxpayers of Washington, it will be the policy of this company to press the rapid completion of this great work. A greater calamity could not have happened in connection with the transportation interests of Washington than the success of the opponents of the Baltimore & Ohio Railroad in the recent controversy. That success would have deprived every interest of Washington of the economy of one and a quarter mile of locomotive service and reversed the action and policy of every prosperous and wisely governed city in the country, by depriving its citizens of so great a convenience and advantage. It would also have led to the indefinite postponement of the Metropolitan Branch road. Such arrangements are being made that in little more than twelve months this road, so important for the interests of Washington, and

so desirable for the whole West, will be opened. Its completion will effect almost magically the progress and prosperity of Washington. It will afford the shortest and best practicable line of connections with thousands of miles of railway, giving to that city cheap freights and most direct lines of travel. It will give to it such advantages as to cause a large portion of the travel from the West and Southwest to pass via Washington to Philadelphia, New York and New England; and thus, whilst the ignorance and folly of those who misrepresented the city of Washington have for a time interposed, yet the people of that city will yet realize such benefit from this work that they will ultimately appreciate the determination and good faith of this company on this subject. It is but just and proper to state that many leading and judicious citizens of Washington, largely and permanently interested in the welfare of that city, constantly assured us that they deemed the opposition of the city government most unfortunate and wrong, and that they regarded the construction of the Metropolitan Branch road as vital to the prosperity of their city.

#### THE MASTER CAR BUILDER'S CONVENTION.

Members in Attendance—Questions to be Discussed Next Year—Entertainments—New Officers.

We copy from the New York *Official Railway News* the following account of the annual convention of the Master Car Builder's Association, held in New York week before last.

The master car builders of the United States assembled in New York city last week for the purpose of holding their annual convention. They came from nearly every principal car factory that is in operation, and when they had convened in session at the St. Nicholas Hotel the following named members responded to the roll call:—

Joseph Jones, New York Central & Hudson River, Albany, N. Y.  
J. N. Mileham, Buffalo & Erie, Buffalo, N. Y.  
Enos Barney, Fitchburg, Charlestown, Mass.  
George Boyden, New London & Northern, New London, Conn.  
Reuel Dean, Boston & Albany, Boston, Mass.  
Olney L. Smith, Providence & Worcester, Providence, R. I.  
V. D. Perry, Hartford, Providence & Fishkill, Hartford, Conn.  
George R. Bentley, Norwich & Worcester, Norwich, Conn.  
L. Garey, New York & Harlem, Morrisania, N. Y.  
F. D. Adams, Boston & Albany, Springfield, Mass.  
J. J. Lawler, Pittsburgh, Columbus & Cincinnati, Steubenville, O.  
A. Steinbach, Philadelphia & Reading, Reading, Pa.  
J. W. Van Houten, Pennsylvania Railroad, Philadelphia, Pa.  
W. H. Dunham, Pittsburgh, Fort Wayne & Chicago, Allegheny, Pa.  
John Marquis, Pittsburgh, Fort Wayne & Chicago, Allegheny, Pa.  
David S. Baker, New Jersey Transportation Co., Jersey City, N. J.  
C. D. Mills, New York Central & Hudson River, Albany, N. Y.  
Robert S. Ramsey, Pennsylvania Railroad, Pittsburgh, Pa.  
Wm. Cleve, Cleveland, Columbus & Cincinnati, Cleveland, O.  
S. J. Hayes, Illinois Central, Chicago, Ill.  
Hugh Gray, Chicago & Northwestern, Chicago, Ill.  
G. W. Demerest, Northern Central, York, Pa.  
Wm. Campbell, Chicago & Western, Clinton, Iowa.  
H. M. Britton, Indianapolis, Cincinnati & Lafayette, Cincinnati, O.  
John McVay, Little Miami, Columbia & Xenia, Pendleton, Ohio.  
C. F. Scovill, Illinois Central, Chicago, Ill.  
Jas. McGee, Pittsburgh, Cincinnati & St. Louis, Steubenville, Ohio.  
J. L. Hackathorn, Kentucky Central, Covington, Ky.  
Richard Attridge, Cleveland, Columbus, Cincinnati & Indianapolis, Indianapolis, Ind.  
E. Lockwood, Camden & Amboy, Bordentown, N. J.  
D. C. Richardson, Boston & Maine, Lawrence, Mass.  
W. H. Allison, Cincinnati, Hamilton & Dayton; Dayton & Michigan, and Cincinnati, Richmond & Chicago, Cincinnati, O.  
E. R. Brown, Lehigh Valley, Mauch Chunk, Pa.  
H. M. Perry, Hartford, Providence & Fishkill, Hartford, Conn.  
Elias Pratt, Boston, Hartford & Erie, Boston, Mass.  
R. Hitchcock, Connecticut River, Springfield, Mass.  
George Hackett, New Jersey Central, Elizabethport, N. J.  
B. Welch, Central Pacific, Sacramento, Cal.  
J. B. Somerby, Easton, Salem, Mass.  
Geo. Dunham, Union Transportation Company, Philadelphia, Pa.  
C. A. Smith, Erie, Jersey City, N. J.  
B. Y. Mitchell, Grand Trunk, Portland, Me.  
James Frost, Georgia Railroad, Augusta, Ga.  
E. A. Olmstead, Long Island, Hunter's Point, L. I.  
Wm. Johnson, New York Central, Buffalo, N. Y.  
M. C. Andrews, New York & New Haven, New Haven, Conn.  
A. Gleason, Old Colony & Newport, Boston, Mass.  
J. M. Rutter, Pittsburgh & Connellsville, Connellsville, Pa.  
J. W. Trussell, Portland & Kennebec, Augusta, Me.  
C. F. Platt, Shore Line, New Haven, Conn.  
H. Kirmse, Terre Haute & Indianapolis, Terre Haute, Ind.  
S. D. Danfield, Westchester & Philadelphia, Philadelphia, Pa.

O. C. Clark, Westchester & Philadelphia, Philadelphia, Pa.

H. F. Douglas, New Haven & Northampton, New Haven, Conn.

Wm. W. B. Bedient, Danbury & Norwalk, Danbury, Conn.

We regret to record the deaths of two of its efficient and active members, J. R. Childs, Esq., late Master Car Builder of the Chesapeake & Ohio, and Calvin Stebbins, Esq., late Master Car Builder of the Boston & Albany. By their long experience in the mechanical department of railways, their loss is almost irreparable, and appropriate resolutions were adopted by the association, copies of which were ordered to be sent to the family of each of the deceased. The first day was taken up in electing officers for the following year and other general business, after which the President said he had some communications which were sent to him, as President of the convention, and they required attention and reply. He then read an invitation from L. G. Tillotson & Co., inviting the Convention to an excursion on New York Bay, by the steamer "James Fisk, Jr." Also a letter from a committee of arrangements of five, by the manufacturers and dealers of the City of New York, for the entertainment of the members of the Master Car Builders' Convention; saying, that they were in receipt of an invitation from Col. James Fisk Jr., inviting them to attend the "Grand Opera House" on Wednesday evening. Also one from the merchants of the city, to tender them a banquet at the St. Nicholas Hotel, on Thursday evening. All of these welcome invitations were unanimously accepted.

The second day was used in discussing car building in general, and the best interests of the railway companies that they severally represented in the association. Committees were appointed to report at the next meeting upon the following subjects, viz:—

The amount of dead weight hauled per ton of freight.  
The average dead weight per passenger on the various roads.

The best manner of painting passenger and freight cars.

Cast steel tired wheels and steel axles, size of journals, &c.

Journal bearings of different composition, draw heads, couplings and pins.

Best brakes and manner of breaking, ventilation, springs under passenger and freight cars, passenger car platforms, a dictionary of terms applicable to car building, the idea being to avoid the confusion of words occasioned by the many different names given the same article by the various roads.

Invitations were extended by Messrs. Vose, Dinmore & Co., inviting the members to a ride through Central Park to their works in Manhattanville, where a sumptuous collation was served them, also an invitation from Messrs. Lindsay, Walton & Co., to the Olympic Theatre the following evening, which were accepted, and a vote of thanks tendered the above parties by the members.

The following officers were elected for the ensuing year:

President—F. D. Adams, Boston & Albany, Springfield, Mass.

Vice Pres.—Hugh Gray, Chicago & Northwestern, Chicago, Ill.

Secretary—Leander Gary, New York & Harlem, Morrisania, N. Y.

Treasurer—A. Steinbach, Philadelphia & Reading, Reading, Pa.

Resolutions of thanks, for the many favors extended during the session of the members of the convention by their New York friends were passed.

The convention adjourned to meet at Richmond, Va., the second Tuesday in June, 1871.

#### Liability of Common Carriers for Losses Caused by Freezing.

The following is the decision of Judge Wagner, of the Missouri Supreme Court, in the case of Wolf vs. The American Express Company, as reported in 43 Mo. 421:

This was an action commenced by the plaintiff to recover damages sustained by reason of the freezing of his wine while in the charge and custody of the defendant. The facts are shortly these: The plaintiff delivered at New York, to defendant, a common carrier, a quantity of wine in casks and cases, to be transported and delivered to him at St. Louis. The wine arrived at East St. Louis on Saturday, the 31st day of December, 1863. At the time of its arrival the weather was severely cold, and on account of the ice floating in the river, it could not be ferried across and delivered to the plaintiff. Defendant had it taken from the cars and stored on a platform, where it was exposed to all the severity and inclemency of the weather from Saturday evening till the next Monday or Tuesday, and while it was lying in this situation it was badly frozen and greatly damaged in value. It is in evidence that wine properly stored or protected was not frozen or injured during the cold weather at that time. The only ground requiring any attention relied on to exonerate the defendant is that the cold weather which caused the freezing was the act of God, and therefore no liability resulted.

The liability of a common carrier has been often discussed and clearly defined. He is held to a very stringent responsibility. He is not only responsible for any loss or injury to the goods he carries which is caused by his negligence, but the law raises an absolute and conclusive presumption of negligence whenever the loss occurs from any other cause than "the act of God or the public enemy." Where no restriction is stipulated for, he is held liable as an insurer, and is responsible in that high degree of diligence commensurate with the duties he assumes. And his liabilities will extend to agencies which the violence of nature causes in consequence of his negligence or defective means. (Levering *et al.* vs. Union Transportation & Insurance Co.; 49 Mo., 88.) Prof. Parsons, in his work on contracts says: "We take the true definition of the 'Act of God' to be a cause

which operates without any aid or interference from man. For if the cause of loss was wholly human, or became destructive by human agency and co-operation, then the loss is to be ascribed to man, and not to God, and to the carrier's negligence; because it would be dangerous to the community to permit him to make a defence which might so frequently be false and fraudulent." (2 Para. Cont. 159, 5th ed.)

The act of God which excuses the carrier must not only be the proximate cause of the loss, but the better opinion is that it must be the sole cause. And where the loss is caused by the act of God, if the negligence of the carrier mingles with it as an active and co-operative cause, he is still responsible. (Amies vs. Stevens, 1 Stra. 128; Williams vs. Branson, 1 Mur. 417.)

After the damages of the goods have been established, the burden lies upon the carrier to show that they were occasioned by the act or peril which the law recognizes as constituting an exemption, and then it is still competent for the owner to show that the injury might have been avoided by the exercise of reasonable skill and attention of the part of the persons employed in the conveyance of the goods. For then it is not to be deemed to be, in the sense of the law, such a loss as will exempt the carrier from liability, but rather as a loss occasioned by his negligence and inattention to duty. Therefore, although the loss occurs by the act of God or the public enemies, yet if it might have been avoided by skill and diligence at the time the carrier is liable. It is true that storms, thunder, lightning, and extreme cold, are all the acts of God, but when these occur, and they directly act upon the goods in course of conveyance, it will be no justification to the carrier if loss or injury happen through his carelessness, neglect, or failure to exert reasonable diligence for their safety and preservation. The cold weather was not the sole nor entirely the proximate cause of the injury which happened to the wine by means of freezing. Had not the negligence and inattention of the defendant co-operated with the cold, the loss would not have taken place, nor the damage occurred. The carrier must not only exercise diligence, but he must use that degree of attention and care which the occasion and subject committed to his trust demand. What would be sufficient care in case of ponderous articles, not liable to be deteriorated by exposure, might be the most palpable neglect in case of costly and perishable goods. His acts and exertions must be commensurate with his duties. If in consequence of his negligence or defective means, a loss occurs, springing out of the agencies which the violence of nature causes, he will not be excused.

I see nothing objectionable in the action of the Court, in giving or refusing instructions. The question of negligence was fairly submitted to the jury, and they having found for the plaintiff the judgment will be affirmed.

#### Burlington and her Eight Railroads.

It is a significant fact that all the railroad enterprises projected or undertaken at Burlington have been successful. Every new railway enterprise ever inaugurated here has been completed or is now in process of actual construction. We have no "skeleton" railroad companies. There are no "routes" partly graded and then converted into pasture lands. Of all the roads built and now building into this city (eight in number) each road has more or less track laid. As this point has been questioned by parties interested in detracting from Burlington commercial laurels, we will again enumerate the roads:

- 1st. Chicago & Burlington.
- 2d. Carthage & Burlington.
- 3d. Burlington & Keokuk (formerly Keokuk & St. Paul)—these two last roads have subsequently passed into the control of the C., B. & Q. company, but are distinctive lines, as much so as any other roads in the country in which two or more lines are controlled by one organization—as the Hannibal & St. Joseph and Michigan Central, both of which are distinct roads although owned by similar interests.
- 4th. Burlington & Missouri River road.
- 5th. Burlington, Cedar Rapids & Minnesota Railway—nearly completed.
- 6th. Burlington & Southwestern, now building in Iowa and Nebraska, with some track laid in the latter State and iron for eighty miles additional bought and to be laid on both divisions this year.
- 7th. The Toledo, Peoria & Warsaw; and
- 8th. The Rockford, Rock Island & St. Louis.

The latter two propose to extend their lines into Burlington, using a joint track across the low land and for a short interior distance, where their lines would coincide, thus obviating a heavy expense through a portion of country that will furnish but little, if any, local traffic. It will be seen that all the above roads are not only successful, but eminently so. They are managed and controlled by powerful companies and backed up by the strongest, most energetic and prosperous railway financiers in the United States.

The first four roads in railway parlance are known as "Joy Roads" and form connecting links and auxiliaries in the system composed of the Great Western, of Canada, Michigan Central, H. & St. Jo., Omaha & St. Jo., the Lawrence & Gulf of Mexico, and the Pacific roads—one of the most powerful combinations in the country. The latter four, although each occupies its own independent sphere, are closely identified with the interests represented by Henry Clews, J. Edgar Thompson, of the Pennsylvania road, Charles L. Frost, Jay Cooke and others, and are entrenched in an almost impregnable position, financially, and to a certain extent will offer a marked competition with the power that controls the other four. This point, however, it is not our province in this article to discuss—we only point to the grouping of railway interests so equally divided here, as the very best possible evidence that Burlington not only actually has what we have for the past twelve months claimed for her, eight distinct lines of railroads, but those roads are all of them either completed or in a rapid state

of construction. Not one of these roads can be pointed out as chimerical or of a doubtful future. Each road has more or less track laid and every one not entirely completed is engaged this year in extending the work.—*Burlington (Iowa) Hawkeye.*

#### Railroad Earnings in May, and from Jan. 1 to June 1.

As the year progresses the reports from our principal lines of railway show a favorable condition of traffic, compared with the same period in 1869. It will be observed in the table of earnings for May, presented below, that most of the prominent roads show a decided increase in their earnings compared with the same months of last year. The month has, indeed, been quite propitious for a large railroad traffic. The higher price of breadstuffs has stimulated the movement of grain at the West; progress in railroad construction in most of the Western States increases the activity of business in those localities, and adds an important item to the freight traffic of the leading lines, while the passenger business is probably larger than in previous years, from the marked attention which has recently been given to dealings in railroad lands; from the large immigration, and from the great increase in travelers for pleasure.

A number of changes have taken place in the list of roads reporting their earnings, within the past year. Several of the old favorites, as the Lake Shore & Michigan Southern and the Port Wayne companies have disappeared, and in their place we find new roads, as the North Missouri, Pacific of Missouri, St. Louis & Iron Mountain, Kansas Pacific, &c., whose stocks are hardly known at the Exchange, but which are daily becoming of more importance as leading lines in the West.

A number of the reports here given are not published elsewhere, and have been obtained through the courtesy of officers of the respective companies, to whom we are indebted for being thus able to present the most complete list of railroad earnings which can be compiled under the prevailing system of secrecy in corporate management.

EARNINGS FOR MAY.				
	1870.	1869.	Inc.	Dec.
Central Pacific.....	\$761,325	\$.....	\$.....	\$.....
Chicago & Alton.....	393,044	345,835	47,209	.....
Chicago & Northwestern.....	1,312,081	1,269,934	42,147	.....
Chicago, Rock Island & Pac.....	597,900	419,173	178,727	.....
Clev., Col., Cin. & Ind'apolis.....	260,169	341,456	18,713	.....
Illinois Central.....	695,253	640,974	54,279	.....
Kansas Pacific.....	341,737	223,163	118,574	.....
Marquette & Cincinnati.....	110,318	111,033	.....	890
Michigan Central.....	406,283	403,646	2,637	.....
Milwaukee & St. Paul.....	730,780	680,544	50,236	.....
North Missouri.....	319,000	189,000	130,000	.....
Ohio & Mississippi.....	246,256	215,639	30,617	.....
Pacific of Missouri.....	283,000	264,273	18,727	.....
St. Louis, Alton & Terre Haute.....	155,081	157,397	.....	2,316
St. Louis & Iron Mountain.....	115,174	73,049	42,125	.....
Toledo, Wabash & Western.....	340,892	312,569	28,323	.....
Total.....	\$6,520,078	\$5,449,002	\$1,071,076	\$20,080

For the five months of the year which have now elapsed the roads, as a general rule, show a fair increase of earnings compared with the same time in 1869, and for the future their prospects would seem to be very good, from the several causes remarked upon above as having influenced to a greater or less extent the earnings in May. The condition of the country is prosperous; the crops are in excellent condition, and the various conditions upon which railroad business depends are apparently such as to decidedly favor the anticipation of earnings fully equal to those of the year 1869:

EARNINGS FROM JANUARY 1 TO JUNE 1.				
	1870.	1869.	Inc.	Dec.
Chicago & Alton.....	\$1,091,866	\$1,171,808	\$.....	\$25,943
Chicago & Northwestern.....	4,231,518	5,225,698	.....	704,175
Chicago, Rock Island & Pac.....	2,155,900	2,069,131	86,769	.....
Clev. Col. Cin. & Ind'apolis.....	1,170,476	1,113,979	56,497	.....
Kansas Pacific.....	1,338,848	793,255	545,593	.....
Illinois Central.....	8,255,176	8,101,082	154,133	.....
Marquette & Cincinnati.....	516,200	514,320	.....	\$10
Michigan Central.....	1,585,562	1,506,743	78,819	40,820
Milwaukee & St. Paul.....	2,329,837	2,293,446	36,391	.....
North Missouri.....	1,176,959	639,095	537,864	.....
Ohio & Mississippi.....	1,186,266	1,050,953	135,313	.....
Pacific of Missouri.....	1,318,019	1,228,235	89,784	.....
St. Louis, Alton & Terre Haute.....	1,610,844	765,454	845,390	.....
St. Louis & Iron Mountain.....	1,225,584	1,491,651	266,067	.....
Toledo, Wabash & Western.....	.....	.....	.....	.....
Total.....	\$24,751,185	\$23,943,024	\$808,161	\$779,008

—Commercial and Financial Chronicle.

—The St. Louis *Republican* says: "A gentleman who was a passenger states that when the train coming east arrived at Jefferson City yesterday, the inspector proceeded as usual to tap the car wheels to test their soundness, when he discovered a boy under one of the cars, who had been stealing a ride from Kansas City. He had formed a sort of net of rope, in which he lay suspended like a spider in his web, between the axle of one of the trucks and the floor of the car. The boy was rooted out of his place, and quite a crowd gathered about him on the platform. He was disposed to be saucy, and said he had no favors to ask of anybody. He stated that he had ridden in this way thousands of miles. As the train was moving slowly off from Jefferson City the boy got into his old place again under the car while it was in motion. The conductor was notified and stopped the train. The boy was hauled out from his lurking place, and, taking up a stone, was in the act of hurling it at the conductor, when the conductor knocked him down. He did not 'dead-head' it any further on that train."

—The Pennsylvania Railroad Company has purchased 362 acres of land at Big Rapids, Michigan, and the company proposes to establish car shops and other manufacturing enterprises and bring men from the East to operate them.

#### Toledo, Wabash & Western Railway.

In view of the absorption by this line of the Hannibal & Naples Railroad, and consolidation with the Lake Shore & Michigan Southern which is expected to take place before many months, the following account of the road from the *Official Railway Guide* will be interesting:

The remarks which we made in September, 1868, relative to the prospective prosperity of this road, are amply verified by the results of business during the fiscal year ending December 31st, 1869. We stated then "that few, if any, of the leading Western railways had, in all human probability, a brighter prospect of financial success than the Toledo, Wabash & Western Railway, and that experience would vindicate the policy which, in 1865, consolidated several lines, naturally and geographically indivisible, into one powerful organization, operating, inclusive of branches, upwards of 520 miles of road."

The earnings for 1869 were \$230,134.83 in excess of 1868; and the results are pre-eminently satisfactory, as demonstrating the earning abilities of the road, in the face of strong competition and ruinously low rates for transportation. Considering the financial ordeal through which this line, in common with other Western railroads, had to pass prior to its consolidation, the stockholders may congratulate themselves upon possessing property which is capitalized at a low figure, and which, from present indications, is destined to become very remunerative. The capital of the company, representing cost of its road-bed, equipment, &c., is as under:

General stock issued, 75,000 shares.....	\$7,500,000
Preferred stock, 10,000 shares.....	1,000,000
First mortgage bonds, Toledo & Illinois R. R. Co.....	900,000
First mortgage bonds, Lake Erie, Wabash & St. Louis Railroad Company.....	2,500,000
First mortgage bonds, Great Western Railroad Company (east of Decatur).....	22,000
First mortgage bonds, Great Western Railroad Company (west of Decatur).....	707,000
First mortgage bonds, Quincy & Toledo Railroad Co.....	1,771,000
First mortgage bonds, Illinois & Southern Iowa R.R. Co.....	500,000
Second mortgage bonds, Toledo & Wabash Railroad Co.....	1,000,000
Second mortgage bonds, Wabash & Western Railway Co.....	1,500,000
Second mortgage bonds, Great Western R. R. Co. of 1869.....	2,500,000
Equipment bonds, Toledo & Wabash Railway Co.....	600,000
Consolidated mortgage bonds, Toledo W. & W. R. W. Co.....	2,700,000
Total.....	\$32,000,000

#### The earnings for 1869 were:

Receipts from passengers.....	\$1,374,589 54
Receipts from freight.....	2,661,335 98
Receipts from United States mail.....	78,049 98
Receipts from express.....	78,108 88
Receipts from miscellaneous.....	745,411 51
Total earnings.....	\$4,938,495 91

#### The expenditures for the same period were:

Transportation expenses.....	\$1,549,386 95
Repairs of locomotives, etc.....	449,733 93
Repairs of roadway, etc.....	612,666 39
Renewal of iron, ties, etc.....	585,617 31
Total expenses.....	\$3,197,404 58

Ratio of expenses to earnings, 71 1/4 per cent.

The net balance was \$1,200,938.23, sufficient to pay interest upon the whole bonded debt and preferred stock. Eventually, however, even with such earnings as were made in 1869, the company will be able to pay dividends upon both capital stock and bonded debt, because, in consequence of faulty construction at first, much that is really chargeable to that account has now to be defrayed out of ordinary transportation expenses; and we find that operating expenses bear a much greater ratio to earnings than is consistent with the character of country through which the road runs. Operating expenses of roads in Illinois, where fuel, ties, bridge timber, &c., are cheaper than in other sections, should not exceed 65 per cent. of gross earnings, and could they be reduced to that standard, without impairing the condition of the property, the common stock of Western roads, instead of having a merely nominal value, would be worth more than the bonds. The policy of any Board of Directors in expending money upon the property so as to give it a permanent and not a fictitious value, cannot be questioned; and, although stockholders may occasionally protest against not receiving dividends, they will discover eventually that results vindicate, to the fullest extent, the conservative policy which, when construction account is closed, invests the earnings, or a large moiety of the surplus over interest on the bonded debt, in permanent improvements. The President, Mr. Boody, deploras, in his report, the extreme competition for business and low rates which necessitated a large increase of tonnage, without a corresponding augmentation of revenue. This evil cannot be remedied, until the managers of various competing lines gain more confidence in the integrity, and good faith of their rivals, or until all the principal lines East and West are consolidated or closely identified with one dominant interest. Rumor has it that the line from Toledo to Quincy is to be consolidated with the Lake Shore & Michigan Southern Railway, and that the road from Buffalo to Quincy and Keokuk will come under one management. Such a programme would give the Lake Shore line an immense leverage for controlling business west of the Mississippi and Missouri rivers, which is now diverted over the more northern route; and in connection with the air line now being built from Hannibal to Kansas City, it could compete more successfully than ever before for the large traffic originating with, and tributary to, the Kansas Pacific Railway. The construction, however, of a line from Decatur to East St. Louis is destined to have a very material influence upon the prospective revenue of the Toledo, Wabash & Western Railway, and must bring over the route, via Cleveland and Toledo, much freight and passenger traffic. St. Louis business proper, and that via St. Louis to other points in the Mississippi valley, forms a very important item in the business of all roads running east and west; and the Toledo, Wabash & Western Railway has been virtually excluded from all this traffic, because the Chi-

cago & Alton Railroad would not give them good connections at Springfield. Now, however, the case will be reversed, and in a few months passengers or freight, via Toledo for the West, will have the option of routes via St. Louis or Quincy.

The report states that the railroad company have obtained a controlling influence in the extensive grain elevators at Toledo. The possession of these elevators is of paramount importance to through business, and relieves the railroad company from various charges for storage, which heretofore had a tendency to divert traffic of this character from Toledo. It is estimated that in nine months the saving effected by the possession of these elevators amounted to more than \$50,000.

### ESTIMATING EARTHWORKS.

(The following is a paper read before the American Society of Civil Engineers by Mr. John R. Gillies.)

It is often desirable to make approximate estimates directly from a profile or longitudinal section when lack of time or better data prevent the use of more exact methods. To expedite and increase the accuracy of this work, the following method has been devised:

The ordinary earthwork tables show for any given road bed, or side slope, the quantities in 100 ft. for each foot in height, assuming the ground level transversely. We may take any one of these tables and plot it as a curve, by drawing a horizontal and vertical line, plotting the heights vertically on the same scale as vertical scale of profile or section on which it is to be used, and the quantities horizontally on an assumed scale. 1,000 cubic yards per inch will be found convenient for most work. The diagram is then copied on tracing cloth or horn, and is ready for use.

To get the amount of work between any two stations on a profile or section, lay the diagram so that its horizontal line is parallel to those of the profile and bisects the grade line at a point; then move it horizontally until the curve passes through some point, which averages the surface line. It is evident that the distance will scale the cubic yards in the prism.

The quantities thus obtained might be read off separately for each hundred feet, by having a scale on the diagram, but there is a much better way. The measuring wheel is simply a wheel about  $\frac{3}{4}$  in. in diameter, with a milled edge and turning on a screw. It is mounted in a frame with a straight edge in front to serve as an index. It may be started from either end of the screw, and after measuring any distance, if run in the opposite direction over a scale, will stop when it gets back to the end of the screw it started from, showing the exact distance it had traversed. On this wheel the quantities due to each hundred feet or successive distances are added, and as often as desirable it is run over a scale, the total number of yards noted, and a fresh start made. A wheel, such as that described, will hold about 75,000 yards on the scale assumed.

Having thus given an outline of the process, the details will be more intelligible.

The diagrams for quantities on side-hill work require tables especially calculated for them, showing the cubic yards due to varying heights for each 5 or 10 deg. of transverse slope, as shown below. The curves thus obtained, and due to different transverse slopes, may for any given road, bed and side slope, be plotted in a single diagram. This enables us to interpolate any intermediate slope by the eye. It will be noticed that both formulæ and diagrams curve the case of side cuts where it is fill on the centre line, and conversely. This is shown in the formulæ by the quantities having a + value for any value of  $h$  greater than  $b$ ; and in the diagrams by the curves starting above the horizontal line where the ground slopes transversely and intersecting it at some distance from the origin. To prevent the diagrams from being too long and unwieldy, the curves may be doubled back upon themselves.

If, on tracing cloth or paper, the diagrams should be pasted on the back of a rectangular frame of pasteboard or tin; if the latter is used it can be turned up at the edge, and will then be less apt to catch against joints in the paper. The left-hand edge of opening in frame should exactly coincide with vertical line of diagram, that it may serve to stop index of measuring wheel.

The scale for light work where none of the cuts or fills are over 30 ft. may be 400 yards per inch, but when work has places 50 or 60 ft. deep, the diagrams would be too long, and 1,000 yards per square inch more convenient. The scale had best be plotted in the centre of a long strip of paper, and laid on the edge of the table when in use.

Similar diagrams can be obtained for culverts, retaining walls and trestles. Box and arch culverts will give straight lines; earthwork, open culverts and retaining walls will be parabolas with their axes above the horizontal line, and trestles, a series of disconnected straight lines with a break in their continuity at each story in height.

Irregularities in surface line between two stations can be regularly arranged by the eye.

Since the diagrams can be plotted with more accuracy than is generally given to the profile or section, the errors will be principally those arising from imperfections in the latter. The method being one of *mean heights* gives results a little too small. If instead of taking the heights at points half way between consecutive stations, they were taken at even stations, only half the quantity due to first and last station being allowed, the result would be by means of end areas, and therefore too large. The greatest uncertainty arises in assuming the transverse slope where it has not been measured on the ground; this must occur in any method.

These diagrams will be found most useful in balancing cuts and fills, whether it be by alterations of grade on a line already run, or by altering the line when running to a fixed grade, and for making approximate estimates. From 3 to 15 minutes are required to estimate and classify the work per mile. The addition being purely mechanical, it may be carried on for hours without fatigue.

This process may be considered a new method of me-

chanical integration, and with slight modification will give areas, centres of gravity, and of inertia, etc. Among its applications is the determination of transverse strength of beams of irregular form.

### FORMULÆ FOR EARTHWORK TABLES.

#### Areas.

Let B H F D be the cross section of a cut, and let  $H F = 2b$ ,  $C G = h$ ,  $B I = C$ ,  $D E = C$ ,  $\cot D F E = F E = s$ ,  $\tan B A I = \frac{B I}{A I} = t$ , then  $c s + b + \frac{h}{t} = \frac{c}{t}$ .

$$c(1-s) = b + \frac{h}{t} \therefore c = \frac{b + \frac{h}{t}}{1-s} \therefore A D F = \frac{b + \frac{h}{t}}{2}$$

$$\left( \frac{b + \frac{h}{t}}{1-s} \right) = \frac{(b + \frac{h}{t})^2}{2(1-s^2)} \quad (1)$$

$$c_1 s + \frac{c_1}{t} = \frac{h}{t} - b \therefore c_1(1+s) = \frac{h}{t} - b \therefore c_1 = \frac{h-bt}{1+s}$$

$$\therefore A B H = \frac{h}{2} \cdot \frac{b}{1+s} = \frac{h-b}{2(1+s^2)} \quad (2)$$

$$\therefore B H F D = \frac{(h-bt)^2}{2(1-s^2)} - \frac{(h-bt)^2}{2(1+s^2)} = \frac{h^2 + 2b^2 + 2bs + 2s^2}{2(1-s^2)} \quad (3)$$

#### Cubic Yards in 100 feet.

Ground level from (3)  $t=0$

$$Q^1 = \frac{100}{27} (h^3 + 2bh)$$

Side cut from (1)  $h$  between  $+bt$  and  $b$

$$Q^2 = \frac{50}{27(t^2-s^2)} (b^3 + h^3)$$

Through cut from (3)  $h$  greater than  $+bt$

$$Q^3 = \frac{100}{27} \frac{h^3 + 2bs + 2s^2}{1-s^2}$$

In these equations, after assigning values to  $b$ ,  $t$  and  $s$ , the only independent variable will be  $h$ , and since it only enters in its first and second powers, the second difference will be constant, and furnish the most rapid and accurate means of circulating the tables.

Let  $n$  be the interval between successive values of  $h$ , whose corresponding second difference is required. Giving  $h$  an increment  $n$  in  $Q^1$ , and then subtracting  $Q^1$ , we get

$$\Delta Q^1 = \frac{100}{27} \{ (h+n)^3 + 2b(h+n) - h^3 - 2bh \} = \frac{100}{27} (2hns + n^3 + 2bn)$$

$$\Delta Q^2 = \frac{100}{27} \{ (h+n)^3 + 2b(h+n) - (h+n)^3 - 2b(h+n) \} = \frac{100}{27} (2hns + 2bn + 2bn)$$

$$\therefore \Delta^2 Q^1 = \frac{100}{27} (2n^2 s)$$

In a similar manner we get

$$\Delta^2 Q^2 = \frac{100n^2}{27(t^2-s^2)}$$

$$\Delta^2 Q^3 = \frac{200n^2 s}{27(1-s^2)}$$

It is generally unnecessary to calculate the quantities oftener than every 5 feet after the first five, as the curves become so near straight lines that they can be filled in mechanically.

In cases where it is considered sufficiently accurate to assume the ground level transversely, the foregoing process may be very much simplified.

Assume width of road-bed zero, the side slopes meeting at G. Then let

$$B E = h, E G = h, \text{ and } \frac{B C}{B G} = s$$

$$\therefore A C G = h^2 s$$

The following table will give cubic yards in 100 feet for  $S=1$ .

A.	Q.	A.	Q.	A.	Q.
1'	3.70	10'	370.37	55'	11903.70
2	14.81	15	523.33	60	13333.33
3	33.33	20	1451.48	65	15448.15
4	59.26	25	3214.81	70	18148.15
5	92.59	30	5333.33	75	20333.33
6	133.33	35	4837.04	80	23703.70
7	181.48	40	5925.93	85	26759.26
8	237.04	45	7500.00	90	30000.00
9	300.00	50	9259.26	95	33435.93

The above quantities have only to be multiplied by the ratio  $S$  for any other side slopes. Or, if plotted as a curve O A, the curves O B, O C, corresponding to any other side slopes, may be laid off from O G with proportional dividers.

For any width of base,  $F D = 2b$ , we have only to add  $h$  to the given height  $h$ , calculate the total area A C G, and subtract area F. D. G.

$$\text{Cubic yards in 100 ft. of } F D G = V = \frac{100 h_1 b}{27}$$

When  $b$  is constant, this is the equation of a straight line O D. The co-ordinates O F, O E, of its intersection O, with any curve O A, represent, respectively, the height  $h$ , and cubic yards  $V$ . If we move the origin of co-ordinates to O, the result will evidently be the same as adding  $h$  to height and subtracting  $V$  from cubic yards due to sum of heights. We, therefore, have the following simple formulæ:

$$Q = \frac{100}{27} h_1 S, \text{ and } V = \frac{100}{27} h_1 b$$

The first represents a series of parabolas, one for each side slope, with a common axis and vertex. The second represents a series of straight lines radiating from that vertex, one for each width of road-bed. The intersections of these lines give the new origins from which curves corresponding to any side slope and width of road-bed can be traced.

The preceding method was devised in 1866 to make an estimate on 200 miles of light work on the Central Pacific Railroad.

### The Effect of the Supreme Court Decision on Michigan Railroads.

Feeling that it would be a matter of interest and importance to know how far the recent decision of our Supreme Court would impede or defeat the railroads in process of construction in this State, we have been at some trouble to obtain accurate information upon the subject. We have confined our inquiries to those companies which have had an actual deposit of bonds with the State Treasurer.

The projected road from Ionia to Stanton, which would open an excellent country and enrich the State greatly, has relied upon municipal aid for means to grade the road and lay the ties, and if this sum cannot be made up by subscription, which is not believed to be possible, the construction of it must be postponed.

Work is still continued on the Elkhart & Lake Michigan road, but it is not known how soon it may be stopped. In some portions of the route of this road the decision has stimulated subscriptions, but in others caused much discouragement.

The Paw Paw Valley road, we are informed by a gentleman interested in it, who has made careful inquiry, is not likely to be constructed without municipal aid, although its prospects hitherto have been very flattering.

The Fort Wayne, Jackson & Saginaw Railroad is built in the State of Michigan. The aid voted was small, and \$20,000 of this is unavailable. The officers find workmen more plenty since the decision, and they assure us that the road will be finished, and finished sooner than it would have been if the decision had not been made.

The Grand Rapids & Indiana Railroad will lose the use of some \$300,000 of bonds, but the road will be pushed on to completion.

The Toledo, Ypsilanti & Saginaw Railroad Company has had aid voted by five towns in Oakland county, five in Washtenaw county, and two in Monroe county, to the amount of \$271,000, and without this its prospects are slim. With the exception of \$20,000 voted by Milford, Monroe county, and \$13,000 by London, Monroe county, the bonds were all in the hands of the State Treasurer before the decision. The Toledo, Ann Arbor & Northern road is substantially put to death by the decision.

The Ionia & Lansing road has received municipal bonds to the amount of \$100,000, which have been sold out of the State and the money realized and expended. There has been \$35,000 voted under the General Aid law, which is not available, and the work will stop where it is, for the present, at least.

The \$250,000 aid voted to the Jonesville, Marshall & Grand River Railroad is rendered unavailable, by the decision, and the work cannot go on. Previous to the decision the enterprise looked very promising.

The Lansing, St. Johns & Mackinac Railroad has stock subscriptions and municipal aid sufficient to prepare the road for the iron 80 miles north of St. Johns, to a point on the Flint & Pere Marquette road, but as three-fourths of the means of the road were in township bonds, it cannot go on. The enterprise will be delayed for years, if not actually killed.

The Kalamazoo & South Haven Railroad Company lose \$125,000 in bonds voted and not delivered and \$22,400 delivered to contractors. Kalamazoo has paid the company \$26,000 of bonds in full. The situation is a hard one, but the gentlemen interested hope by earnest effort and by legislative action to overcome its difficulties.

The available means of the Detroit, Howell & Lansing road, which were in the shape of municipal aid, were nearly sufficient to prepare the entire line for the iron, and to iron it as far as Plymouth. The effect of the decision upon it is wholly disastrous. All the work has been discontinued and all the employees of the road discharged, and its officers await the action of the Legislature and the decision of the people.

The officers of the Chicago & Lake Shore road feel greatly crippled by the decisions, but do not despair. An effort is now making to obtain by subscription 75 per cent. of the amount voted by municipalities, but we hear the prospect is not encouraging. If this sum is obtained the road will be pushed sixty miles north from St. Joseph the present season.

The Detroit, Hillsdale & Indiana road has been managed with energy and made excellent progress, but it needs the aid of the towns along the route to secure its completion. We do not despair of its being able to get through. It certainly ought not to fail for the comparatively small aid it will require, and which the decision has swept away.

The Peninsular Railway, we understand, will keep in motion. The road from Grand Rapids to Manistee will be built. The Michigan Lake Shore (Gardner road) will be pushed on to completion without the aid of towns. The Michigan Air Line will no doubt be completed from Jackson to Niles. The Port Huron & Lake Michigan road is much crippled, but may get through. The Holly, Wayne & Monroe; Port Huron & Owosso; Owosso & Big Rapids, and Westphalia, Hubbardston & Northern, seem to be essentially dead.

As will be seen from the above statements, very few, comparatively, of the roads projected in view of receiving municipal aid, will be built unless some plan is devised to overcome the present effect of the decision of the Supreme Court.—*Detroit Tribune*, June 15.

# General Railroad News.

## OLD AND NEW ROADS.

### Concord & Rochester.

A bill has been introduced into Congress to aid this road, which looks very much like a caricature of the bills granting public lands to Western roads. The bill grants the right of way, 100 feet wide on each side of the road, and the right to take from any adjacent public lands materials for constructing the road, and also the necessary land for depots, stations and side-tracks, and also each alternate section, to the extent of twenty sections on each side of the road, making forty sections for each mile of the road. In case there shall be no public lands on either side of the road, then the Secretary of the Interior shall select said sections of land from any other public land not more than 2,400 miles from the line of the road. There are also sundry provisions concerning the transportation of government troops and supplies. Probably the proposer of the bill thought that some reward should be provided for men who stay at home, since so many have been offered to those who emigrate.

### Washington & Fredericksburg.

George B. Roberts, of Pennsylvania, has been elected President of the company to build a railroad from Washington to Fredericksburg, uniting with that to Richmond. The work is to be immediately commenced, and completed by December next.

The Pennsylvania Railroad Company owns a controlling interest in this road, and thus will secure a line from Richmond, via Washington and Baltimore, to connect with its main line.

### Buffalo & Lake Huron.

The agreement of the Buffalo & Lake Huron Railway Company with the Grand Trunk Company has been confirmed by the Legislature of Canada, and the bill has received the Royal assent. By the Act of Parliament, the constitution of the undertaking is altered, and the ordinary share capital will be converted into Grand Trunk stock, half fourth preference, and half ordinary stock, and the preference shareholders will become the sole proprietors in the company.

### Intercolonial Railway.

The Privy Council have confirmed the report of the Intercolonial Railway Commissioners on the following sections, and they are let as follows: No. 3, T. H. Berlinquet & Co., Quebec, \$462,444; No. 6, T. H. Berlinquet & Co., Quebec, \$456,946; No. 4, Smith & Pefflado, Amherst, \$438,335; No. 7, J. Simpson & Co., Londonderry, \$557,750; No. 5, A. McDonnell, Hamilton, \$533,000. New sections—No. 13, W. E. McDonald, Glencoe, \$934,933; No. 14, Nelson & McGaw, Belleville, \$245,475; No. 16, King & Gough, St. John, \$206,000; No. 17, P. P. Tuck, St. John, \$440,000; No. 18, R. H. McGreevy, Ottawa, \$648,600; No. 19, P. P. Tuck, St. John, \$395,733.

### St. Louis & Arkansas.

The *Mississippi Valley Review* says: "Although the Iron Mountain Railroad is being rapidly pushed southward from Pilot Knob, we believe no definite location has until now been named as its southern terminus. Arrangements were consummated by Mr. Allen and the directors of the Cairo & Fulton Railroad of Arkansas, by which the St. Louis & Arkansas and the Iron Mountain Railroads are to be simultaneously constructed, and that a junction of the two will be formed near the State line. Twenty miles of each are being rapidly built—the Cairo & Fulton northward from Little Rock to be done by December, and the Iron Mountain southward from Pilot Knob; these divisions done, the whole line from Little Rock to Fulton will be built as speedily as possible. The length of line in Arkansas is 300 miles, and in Missouri 89 miles. Total distance from Pilot Knob via Little Rock, and Little Rock to Fulton on Red River, about 475 miles. The distance from Pilot Knob to Little Rock is about 250 miles. At Little Rock connection will be made with the Fort Smith road, and also with the Pine Bluff road. In Arkansas the State grants a subsidy of ten thousand dollars a mile for each of those roads, and two of them have land grants from the federal government. The counties through which the lines run generally subscribe about \$100,000 each. In Missouri there is a land grant from the United States, and while Iron county contributes nothing, it is expected that the counties of Wayne, Butler and Ripley will subscribe liberally. Engineering parties for the surveys and final locations are already ordered into the field."

### Leavenworth, Lawrence & Galveston.

It has been determined that this road shall cross the Missouri, Kansas & Texas Railroad at a point in section 16, township 27, range 18, about six miles nearly due south of Humboldt. It is probable that the course of the road south of the junction will be west of south.

### American & Mexican.

The Chief Engineer, Mr. John H. Mullen, has completed the survey from El Paso to near Santa Cruz, in Sonora, thence turning southward and passing through Sonora to Guaymas. The whole country is reported rich in agricultural lands and mineral wealth, with easy grades over low mountains, not exceeding 3 per cent. Timber is abundant for ties and for bridges, with a plenty of stone of excellent quality. In the whole distance of 700 miles the only heavy work is for a distance of 15 miles in the Sierra Madre mountains, where two bridges spanning 200 feet, and a short tunnel will be required. The average cost is said not to exceed \$23,000 per mile. The climate is that of perpetual summer through the whole distance, and there will be no impediment the year round. The Mexican Commissioner accompanied the survey, and will make a favorable report to his government.

### Texas & New Orleans.

This railroad, which was completed from Houston to the Sabine River at Orange, on the Louisiana boundary, before the war, but has been so nearly destroyed that it has not been operated since, has been repaired from Houston eastward to Liberty, on the Sabine River, a distance of about thirty miles, and cars are now running on that section. The road will soon be put in condition through to Orange, and there it is to be met by an extension of the New Orleans & Opelousas road from its present terminus at Brashear.

### South Shore Railroad.

This road extends from Braintree, 10½ miles south of Boston on the Old Colony & Newport Railroad, east to Cohasset, on the coast, a distance of 11½ miles. It has paid no dividends for some time past. The stockholders on the 11th inst. decided to accept an arrangement by which they can dispose of their stock at \$11 per share to the Old Colony & Newport Company with the privilege of taking half of their pay in stock of that company. The meeting also unanimously ratified the action of the directors in subscribing for \$125,000 worth of stock in the Duxbury & Cohasset Railroad which it is proposed to build from Cohasset southward along the coast about 16 miles to Duxbury, near Plymouth.

### Connecticut Valley.

A correspondent at Higganum, Conn., informs us that grading on this road, which is to extend from Saybrook, on Long Island Sound, northward to Hartford, about 40 miles, was commenced April 14, and is progressing reasonably fast, though laborers are scarce. Two steam shovels are in use and another will be put on directly.

### East Brandywine & Waynesburg.

This road, leased and operated by the Pennsylvania Railroad Company, extends from Downingtown, on the Pennsylvania Railroad, northwest 17½ miles to Waynesburg, in the west part of Chester county. It is now proposed to extend it about 12 miles further west to New Holland, Lancaster county.

### Midland of New Jersey.

The contract for building two sections of the Midland Railroad, near Newark, N. J., and a bridge over the Passaic, at Woodside, have been awarded to Messrs. Backus, Sanford & Sanford, and Overton & Lewis, for \$250,000.

### Peninsular of Michigan.

A correspondent of the *Flint Globe* calls attention to the suggestions that have been published in some of the journals of the State, and that Mr. Dibble, President of the Peninsular Railroad, instead of carrying out his previously avowed plan of connecting with the Port Huron & Lake Michigan Railroad, is now endeavoring to connect at St. Clair with the projected Canada Southern line, and thus leave Flint out in the cold, going from St. Clair through Romeo and Holly to Lansing. The correspondent does not seem to have much faith in the rapid progress of the Port Huron & Lake Michigan Railroad.

### Grand Chain.

This company was organized in St. Louis by the election of the following officers and directors: J. D. Champin, of New York, President; W. P. Billings, Vice-President; H. P. Lynch, of Commerce, Secretary; J. W. Ross, of Commerce, Treasurer; H. J. Deal, J. A. Billings, Thos. L. Rhodes, E. J. Donnelly, Geo. Watson, H. P. Lynch and Jas. D. White. This line will be twenty-two miles long, and is intended to connect with the Memphis & St. Louis Levee Railroad; the Cairo & Fulton, and the Iron Mountain Railroad at Morley, and crossing at the grand chain at Commerce, to connect at Mound City Junction with the Illinois Central Railroad, and with the Vincennes & Ohio Railroad—the latter to be completed to Mound City by the 1st of January, 1871. Scott County Court have ordered a proposition to subscribe \$150,000 to this road, to be submitted at the November election.

### Cartersville & Van Wert.

This road is to extend from Cartersville, Ga., a station on the Western & Atlantic Railroad, a few miles above

Alatoona Pass, southwest about twenty-five miles to Van Wert, in the eastern part of Polk county. The track is laid from Cartersville to the Etowah river, four miles. The abutments of the bridge are in process of construction, and the frame work will be ready as soon as the abutments are completed. The grading of the road has been nearly completed to the slate quarries at Van Wert, and depots selected at suitable places along the line.

### Jacksonville, Pensacola & Mobile.

The State of Florida subscribed \$4,000,000 of bonds to this company, but citizens of the State have applied for an injunction to prevent their sale.

### St. Paul & Pacific.

The St. Paul *Pioneer* of the 19th says: "On the St. Paul & Pacific Railroad iron is now laid to the new town of Benson, 80 miles west of Wilmar. Beyond Benson the road is graded for 35 miles ready for the iron, which carries it ten miles west of the Pomme de Terre river. The construction of the bridge, and a long line of pile trestlework at the crossing of the Chippewa river, will delay track-laying from twenty to thirty days, say to July 15, when the work will go ahead again with a rush, calculated at the rate of two miles per day to Red river, a distance of 75 miles from Benson, thus finishing the road by the 1st of September."

### Davenport & St. Paul.

During a late visit to the East, Hiram Price, President of this company, completed contracts for the purchase of iron and rolling stock for the whole line of the road.

### Norfolk & Tennessee.

A bill has passed the Virginia Legislature which provides for the consolidation of the three railroads, which form a line between Norfolk, Va., and Bristol, on the East Tennessee line, and have been for some time under the management of General Mahone. These are the Norfolk & Petersburg, from Norfolk to Petersburg, 81 miles long, the South Side Railroad, from Petersburg to Lynchburg, 123 miles, with a branch from Petersburg to City Point, ten miles; and the Virginia & Tennessee Railroad, from Lynchburg to Bristol—204 miles, with a branch from Glade Springs (28 miles from Bristol) to Saltville, 8½ miles. These form a trunk line 408 miles long, entirely across the Southern part of Virginia, with connections to Mobile, Memphis and New Orleans. The capital represented by the entire line is about \$18,000,000.

### Atchison, Topeka & Santa Fe.

A bill passed the Senate this week authorizing this company to continue its line over three hundred to Albuquerque, with a branch of one hundred miles or more, and it is said that by the terms of the bill, without the fact appearing on its face, it can be run through the Osage lands. The bill calls for about 6,000,000 acres of land.

### Denver Pacific and Kansas Pacific.

From a telegram received this week by Mr. C. N. Pratt, General Eastern Agent, in this city, we learn that the Denver Pacific will be completed and in running order by the 29th of this month. Immediately on its completion iron for the Kansas Pacific will be shipped to Denver, via the Union and Denver Pacific roads, and tracklaying will advance at the rate of a mile a day from each end. The Kansas Pacific is already graded and tied ready for the iron fifty miles east from Denver. General W. J. Palmer, Chief Engineer, is urging forward the work as rapidly as possible, and expects to have the entire line from Kansas City to Denver open and ready for business some time in August.

### National Railroad of New Jersey.

The Philadelphia *Press* says that surveying parties are busily engaged in laying off the route from Philadelphia to New York. The company will commence by constructing from Trenton, through Mercer and Somerset counties, to meet the New Jersey Central road at Bound Brook, on the Raritan, 31 miles from Trenton. *Pro rata* arrangements have been made with the New Jersey Central Railroad Company from Bound Brook to New York until a new and more direct line can be built. It needs, therefore, only 31 miles of a new road to connect New York and Trenton, and this being accomplished, the line will be extended to Philadelphia. This road proposes a two hours' trip over steel rails, and with few stoppages. The distance from New York to Philadelphia via Bound Brook will be 95 miles, five miles longer than the present line.

### Cincinnati, Richmond & Fort Wayne.

The track is being laid at the rate of half a mile a day. It is confidently expected that the road will be completed to Winchester by the 4th of July.

### Quincy & Warsaw.

It is intended to extend the line of the proposed Quincy & Warsaw road thirty-one miles beyond Warsaw, in a northeasterly direction, to Swan Creek, in order to connect with the Rockford, Rock Island & St.

Louis road, thus making a through route to Chicago, via Sterling and the Northwestern Railway.

#### Indianapolis & St. Louis.

This company which was the old St. Louis, Alton & Terre Haute road, has made arrangements to use the Decatur & East St. Louis road between East St. Louis and Litchfield, which will be considerably shorter their own line by way of Alton.

#### East St. Louis Ferry Approaches.

We learn from the *Mississippi Valley Review*, which abounds in information concerning railroads, and especially those in which St. Louis has an interest, that the railroad ferry approaches, opposite the depot of the Ohio & Mississippi Railroad, will be completed in a few days. The several roads now terminating in East St. Louis—the Chicago & Alton excepted—are to share these increased transfer facilities on an equal footing. The approaches are equally accessible over the Ohio & Mississippi track, and that of the Decatur & East St. Louis railroad. A third rail will be laid on the first named road for the accommodation of the narrower gauge of the St. Louis, Vandalia & Terre Haute Railroad, and the St. Louis & Southeastern Railway Company, from the crossing, near the rail mill. The Indianapolis & St. Louis line, as also the Rockford, Rock Island & St. Louis Railroad, will come in on the track of the Decatur & East St. Louis Railroad.

#### Boston & Portland.

The charter of the Boston & Portland Trust Railway Company provides a capital of \$18,000,000 to buy the stock of the Eastern road at 130 and of the Boston & Maine at 150, the roads to be consolidated and managed by the company until 1900, when the lines are to pass into the possession of the States in which they lie. Similar legislation in Maine and New Hampshire will be necessary.

#### Rockford, Rock Island & St. Louis.

The New York *Official Railway News* of the 18th inst. says: "An important case—George Knox against the 'Rockford, Rock Island & St. Louis, the Union Trust, 'of New York, and St. Louis, Alton & Rock Island—which has for more than a week been on hearing before Hon. J. S. Bailey, Master in Chancery, on a motion for injunction, is concluded. Ex-Secretary O. H. Browning appeared for complainants, and G. W. Fuller, of Chicago, and C. M. Osborn of Rock Island, for defendants. The arguments were very able and exhaustive, and numerous authorities were cited and affidavits read on each side. After a patient hearing, Judge Bailey ordered an injunction to issue against the 'Rockford, Rock Island & St. Louis, restraining the company from appropriating any funds derived by it from its mortgage bonds to the construction of said railroad 'via Astoria, Vermont, Bushnell, &c., or using any iron 'bought with said funds on the grading now being 'made through said places. The required bond having 'been filed the writ of injunction was duly issued." The bridge of this railroad at Beardstown, Ill., is finished. It is 1,065 feet in length, and, with the piling at each end, cost \$300,000.

#### Boston, Hartford & Erie.

Another bill to aid this road, with important modifications which provide for the completion of the road to Willimantic, a new election of directors within three months, and for the prosecution of the work on Boston Flats, and that the Burdell bonds deposited as security for scrip yet to be issued shall not be exchanged for second mortgage bonds, passed the Massachusetts Legislature, but was promptly vetoed by Governor Claflin. One might think that this would be the end of attempt to extract more money from the State, but we hear that another bill has been prepared, which, it is thought, will escape the Governor's veto.

#### New Jersey West Line.

This railroad is to extend from Jersey City westward to Milford, on the Delaware river 16 miles below Easton, a distance of 66 miles. The whole line is under contract, a large part graded, 30 miles from Jersey City to be completed by next October, and the rest a year from that time. In connection with the East Pennsylvania railroad it will form quite a direct route from New York to the East. Suits are about to be commenced by townships along the line of this road to enforce an agreement under which half a million dollars in bonds were given to aid the work. It is claimed that the townships were to have a first mortgage on the road, notwithstanding which the company has given such mortgage, for \$3,000,000, to other parties.

#### West Chester & Philadelphia.

This railroad extends from Philadelphia west by south 17 miles, then west by north  $9\frac{1}{2}$  miles to West Chester, from which point it has a branch nine miles long to a junction with the Pennsylvania Railroad 20 miles from Philadelphia. The trains of the Philadelphia & Baltimore Central road use 17 miles of the road in entering

Philadelphia. It is now rumored that the directors of the Pennsylvania Railroad Company are making efforts to get possession of the West Chester Railroad, and that indirect heavy purchases of stock and bonds have recently been made for them. It is said that the main trunk of the Pennsylvania road has become too much crowded near the city, and they desire the West Chester road as a relief, and to that end it will be extended from West Chester to Downingtown, about seven miles, giving an entrance into Philadelphia, just about as long as the present route.

#### Pittsburgh & St. Louis.

It is proposed to build a railroad six miles long from Belleville, Ill., to some coal mines at Pittsburgh, which is northwest of Belleville, and about six miles southeast of East St. Louis.

#### Portage, Winnebago & Superior.

Portage county, Wis., on the 11th inst. voted aid to the amount of \$100,000 to the Portage, Winnebago & Superior Railroad Company. Neenah and Menasha had previously voted \$50,000 each, and Waupaca and Wauwega \$30,000 each. This gives nearly the entire amount necessary to complete the road from Doty's Island to Stevens' Point forthwith.

#### Davenport & St. Paul.

It is proposed to locate this road through Strawberry Point in the southwest corner of Clayton county, Iowa, and the township was to vote on the 22d inst., on a proposition to subscribe five per cent. of the assessed value of the property in the township in aid of the line. Lodomillo township, next north is to vote on a similar proposition on the 25th inst.

#### St. Louis & St. Joseph.

The St. Joseph *Gazette* is informed that the track on the east end is now laid within one mile of Plattsburgh. Here some steep bluffs and a considerable stream interfere with the work, but three pile drivers and a large force are laboring day and night, and will soon overcome all obstacles. On the west end of the road the track is laid within five miles of Plattsburgh, leaving a gap of only six miles unfinished. This will soon be closed, and it is confidently anticipated that by the 10th or 15th of next month the entire road will be completed.

#### Kansas City & Santa Fe.

Concerning the section of this road from Olathe to Ottawa, Kansas, 31 miles, between the Missouri River, Fort Scott & Gulf and the Leavenworth, Lawrence & Galveston railroads, the Olathe *Mirror* of a late date says: "From Ottawa the track is laid two miles east, 'by the last of the present week the construction train 'will cross Ottawa creek and be running up the valley 'of the Wolf. The mason work under the supervision 'Messrs. Norway & Gill, on Rock and Walnut creeks 'will be finished by the 15th of next month; on Bull 'creek the masonry of the bridges is well underway. 'Mr. Wright, with his patent excavators is crowding 'the work on the depot grounds at Gardner and all will 'be cleared before the track reaches that point. To sum 'up—all the stone culverts are finished, the trestle work 'across Cedar creek is finished, one of two Howe truss 'bridges was raised yesterday, the other will be raised 'this week, and the light work on the whole length of 'the line being now ready for the track."

#### Pacific of Missouri.

The company have lately leased the Lawrence & Pleasant Hill Railroad, 58 miles long and not yet completed, for 30 years with privilege of renewal. By the terms of the lease the Pacific company are to equip and operate and guarantee a rental of \$60,000 in gold and \$15,000 in currency. They are to pay 35 per cent. of the gross earnings for the first ten years, and 33 $\frac{1}{3}$  per cent. for the balance. If this percentage of the gross earnings does not come up to the guaranteed amount of \$75,000 the deficiency is to be met out of the gross earnings when in excess.

By means of this leased line the Pacific company will secure connection with the Missouri River, Fort Scott & Gulf Railroad at Olathe, and the Leavenworth, Lawrence & Galveston and Kansas Pacific roads at Lawrence, shortening the line from St. Louis to Lawrence and Denver by 18 miles.

They have also leased the Sedalia & Lexington Railroad, 54 miles long, at a rental of \$54,000 per year, for a term of thirty years. The Pacific agree to operate it.

#### St. Joseph & Council Bluffs.

In a late letter to Mr. A. L. Hopkins, Superintendent of this road, Mr. Joy expressed himself as follows in reference to the relations of the city of St. Joseph to the company and the building of the depot at the foot of Francis street:

"The building of the depot, they have the right to 'require. If they intend, however, to raise questions 'about the consolidation, and try to prevent that, I 'shall deem it hostile action. It cannot prevent con-'solidation, which is [for the interests of all parties in

cluding those of St. Joseph. If we are to have a difficulty with the city we must know it, and before we 'build the depot. And I wish you to send a copy of 'this letter to the Mayor, and let the Council declare 'themselves. After we shall know fully what the action of the Council sent me means, we shall know 'what action to take. I do not believe it is disposed to 'take any unreasonable and hostile action, or which will 'bring our interests or theirs into collision. If, however, 'this should be the case, it should be understood at this 'time and before we go on to expend more money."

In reply to this letter the St. Joseph City Council resolved "That the best interest of the city requires a full 'compliance, on the part of the St. Joseph & Council 'Bluffs Railroad Company, with the provisions of the 'contract made with the city. That the city will not, at 'this time, consent to any modification of the contract; 'and that it especially requires the building of the depot 'at the foot of Francis street."

#### Lake Superior & Mississippi.

The northern end of the road is just completed from Duluth to Fond du Lac, sixteen miles. The gap is but a few miles long.

#### Chester to Centralia.

Mr. J. B. Moulton left St. Louis last week to survey a route for this new road which is designed to develop the coal interests and will pass through the coal fields of Randolph county. The counties through which it will pass, Randolph, Perry and Washington, have agreed to subscribe \$10,000 per mile towards its construction. It will have a branch to Tamaroa, and it is intended to complete it in about six months.

#### Memphis & St. Louis.

In the last edition of this paper there were given some statements with reference to this enterprise and we are indebted to the St. Louis *Journal of Commerce* for further information. The line is composed of two organizations—"The St. Louis & Memphis Branch Railroad," in Missouri; and the "Memphis & St. Louis Railroad" in Arkansas. The line is to commence at Cape Girardeau thence southward via Commerce and Morley to New Madrid; thence parallel with the Mississippi river to a point opposite Memphis; thence to Helena, where it will connect with a similar enterprise on the East side of the river, called the "Helena & Vicksburg Railroad." Its northern connections will (perhaps) be with the Iron Mountain at Morley; at Commerce with the East St. Louis and Cairo Railroad, the Illinois Central Branch, and the Indianapolis, Vincennes & Cairo; at Memphis it will connect with the various east and west roads. The bed of the railroad wherever necessary, to be built as a levee to secure the low lands west of the Mississippi from overflow. The length of the two roads will be about 225 miles, the distance from St. Louis via Iron Mountain Railroad to Memphis is 300 miles, hence this line when built will shorten the distance 47 miles over the present route. A large and efficient engineer corps are in the field preparing for laying out the work. The whole work in Arkansas is under contract, and the contractors preparing to commence work on the arrival of Gen. E. W. Serrell, of New York, the Chief Engineer, who will be on the ground next week—when work will begin in earnest. This Levee, when completed, will reclaim from overflow from 3,500,000 to 4,000,000 acres of the richest lands in the World, lying in the St. Francis basin—the most productive corn and cotton lands in the Mississippi Valley.

#### Detroit, Hillsdale & Indiana.

It is hoped that this road will be completed from Ypsilanti to Manchester, where it will cross the Jackson Branch of the Michigan Southern, before October.

#### Jackson & Cincinnati.

Meetings are held and interest awakened in favor of a railroad from Jackson, Mich., southward through Hudson, Mich., Defiance, Ohio, to Cincinnati, which would form a link in the long talked of air line from Pensacola to Mackinaw.

#### Toledo, Ann Arbor & Northern.

Since the decision of the Michigan Supreme Court invalidating its bonds subscribed to this road, Ann Arbor has raised by private subscription \$115,000 and expects to raise \$50,000 more for the road, which, it seems, the Baltimore & Ohio is likely to control if built.

#### Hannibal & St. Joseph.

We learn that this company have lately perfected arrangements by which they run through passenger coaches from St. Joseph to Cincinnati, via Springfield, Terre Haute and Indianapolis.

#### Kansas City & Plattsburgh.

A company for building this road, about 30 miles long, to connect Kansas City with the Chicago & Southwestern Railway at Plattsburgh, was organized at Kansas City on the 17th instant, by the election of the following directors: E. M. McGee, J. W. Reid, Theo. S. Case, F. R. Long, Kansas City; Lewis Woods, Clay county;

Geo. Duncan, J. W. Birch, Jr., C. W. Porter, M. M. McPhetridge, Jno. Nesbitt, Clinton county.

The following officers were also elected: President, James H. Birch, Jr.; Vice President, Col. E. M. McGee; Secretary, Jonathan Nesbitt; Treasurer, Col. Lewis M. Woods.

On the route of the abandoned Parkville & Grand River Railroad, some nineteen or twenty miles of grading has been done. This same route can be used for the road to Plattsburg, and if the new company obtain control of the graded route, the work of building the road will be considerably lessened. But, in any event, it is the determination to have the road completed in the course of a twelve-month.

#### Arkansas Railroads.

The Little Rock *Republican* says: There are now only 95 miles of railroad in operation in Arkansas, yet her population, wealth and resources, as compared with those of Missouri or Kentucky, would entitle her to 900 miles of road. Twelve hundred miles of railroad lines are projected. Most of the routes are trunk lines and are liberally endowed with land grants from either the general government or the State, and are also entitled to a loan of the State credit for an aggregate length of roads not to exceed eight hundred and fifty miles. The following are the roads to which the State aid is pledged:

The Memphis & Little Rock Railroad and its continuation westward, the Little Rock & Fort Smith Railroad, which lines traverse the State from east to west.

The Mississippi, Ouachita & Red River Railroad, running through the heart of the cotton belt, from the Red river to the Mississippi.

The Little Rock, Pine Bluff & New Orleans Railroad, which is the extension of the Little Rock & Fort Smith Railroad, along the valley of the Arkansas to its mouth, and thence along the Mississippi to Vicksburg.

The Cairo & Fulton Railroad, which traverses the State diagonally from its northeastern to its southwestern boundary.

On all these lines the work of construction is being actively pushed. The Memphis & Little Rock Railroad will be completed in time for the cotton crops. The Little Rock & Fort Smith Railroad has twenty miles of road in running operation and has one-third of its line graded. The Mississippi, Ouachita & Red River Railroad has two-thirds of its line graded. The Little Rock, Pine Bluff & New Orleans Railroad has fifty miles of its line graded and will be completed from the Mississippi river to Pine Bluff by December next. On the Cairo & Fulton about ten miles of the line are graded, and work is being rapidly pushed forward.

Very unfortunately for the State, the right to grant railroad charters was transferred from the legislative to the executive department, and the result is that some 40 companies have been organized under the general incorporation laws for building railroads in every direction across the State. In reading over the list of incorporators, one becomes quite familiar with a few names whose policy appears to pre-empt or pre-occupy all the desirable routes, so that whenever capitalists come forward to build a road upon any of these routes, this ring of railroad speculators must be subsidized or taken into the new company.

#### Red River Construction Company.

This company have the contract for the construction of the first division of the Northern Pacific Railroad, and advertise in another column of this paper for proposals from "contractors of ability and experience" for constructing sections of from one to forty miles. Proposals will be received any time after to-day at their office in Minneapolis.

#### Canada Southern.

A document sent to England by W. A. Thompson, President of the above company, speaks confidently of a large local traffic for this projected line and affirms that it will cost not much more than one third that of Great Western or Grand Trunk, per mile. Commenting on this *Herapath's Journal* says: "It is all very fine to talk before its construction of a new and competing line costing much less per mile than the line against which it would compete, but we may observe that if it would successfully compete, its works, rolling stock, &c., must be quite equal to those of the line competed against, and land, labour, and materials are all (we believe) dearer in Canada now than they were when the Great Western of Canada and Grand Trunk line were made."

"There are railways enough in Upper Canada for the traffic, including the improvements to be effected by the Grand Trunk in respect of their Buffalo Bridge and its railway connections, and those to be made by the Great Western of Canada in the straightening of their line. We don't think Canada can well support any new great line of railway."

Moreover, the Great Western Company enters the

field, evidently determined that it shall not be its fault if the Canada Southern gets capital to build its road in England. Mr. Brackstone Baker, the Secretary of the Great Western Company, has issued the following circular under date of June 1: "Information has been received from Canada to the effect that a company has been organized to construct a rival line to the Great Western Railway of Canada, and that the necessary deposit has been lodged with the Province of Ontario. The directors of the Great Western desire to intimate that this company has legislative power to construct a line under more advantageous circumstances to cover the same territory, in alliance with the Michigan Central Railroad. This question was discussed at the recent meeting of shareholders, and a special meeting will be at once called, at which, from the facts then to be submitted, authority will be sought to proceed forthwith with the construction of a loop to the main line."

#### Peru Railroads.

The Government of Peru advertises in Europe an issue of \$11,920,000 sterling, six per cent. consolidated bonds, for the construction of railroads, offered at 83½ per cent. of their face. The railroads to be built from the proceeds of these bonds are lines from Callao to La Oroya, and from Arequipa to Puno. The latter of these extends across the Andes to Lake Titicaca, and the former forms a sea port up to the heart of the mountains, and the latter will require very heavy mountain work.

#### ELECTIONS AND APPOINTMENTS.

The result of the Lake Superior & Mississippi Railroad Company election at Philadelphia on the 6th inst., was as follows: President; W. L. Banning; Vice-President, S. M. Felton; Secretary and Treasurer, R. H. Lamborn; Directors, S. M. Felton, Isaac Hinkley, Thomas A. Scott, Wm. G. Morehead, Robert H. Lamborn, Clarence H. Clark, Frank H. Clark, H. S. McCombs, George C. Thomas, Jay Cooke, Jr., Wm. L. Banning, James Smith, Jr.

A meeting of shareholders of the Canada Southern Railway Company took place on the 16th inst., at the Clifton House, Niagara Falls, when a permanent organization of the company was effected. The following were unanimously elected Directors for the ensuing year: John F. Tracy, President of the Rock Island Company; Wm. L. Scott, President of the Erie & Pittsburgh Company; Sidney Dillon, Director of the Union Pacific Company; Milton Courtwright, Director of the Lake Shore, and Rock Island, and Northwestern companies; Daniel Drew, of New York; Wm. A. Thompson, President of the Erie & Niagara Company; Oliver S. Chapman, of New York; Benj. F. Hall, of New Jersey; and Jerome Wetmore, of Erie, Pa.

Wm. J. Allen, who was for some time Assistant Train Dispatcher of the Chicago, Rock Island & Pacific Railroad Company, at Des Moines, has accepted a position as Train Dispatcher and Division Telegraph Manager of the Humboldt Division of the Central Pacific Railroad, with headquarters at Carlin, Nevada.

Jesse W. Crouse, formerly of Philadelphia, has been appointed Assistant Superintendent of the Northwestern Telegraph Company, with headquarters at St. Paul, Minn.

At a meeting of the stockholders of the Cedar Rapids & Missouri River Railroad Company, held at Cedar Rapids, Iowa, on the 8th instant, the following directors were elected: Oakes Ames, Oliver Ames, John B. Alley, John I. Blair, James Blair, D. C. Blair, S. S. Crowell, John F. Ely, Wm. T. Glidden, R. G. Hazard, T. Nickerson, Charles E. Vail, W. W. Walker, J. M. S. Williams, Horace Williams.

On the same day an election of directors of the Iowa Railroad Contracting Company resulted in the choice of the following gentlemen: John I. Blair, Oakes Ames, D. C. Blair, W. W. Walker, and Chas. E. Vail.

At the annual meeting of the stockholders of the Chillicothe & Des Moines City Railroad Company held in Trenton, Mo., on the 6th inst., the following Directors were unanimously elected for the ensuing year: Peter Cain, H. J. Alley, Ira B. Hyde, R. B. Ballew, Israel Patton, Wm. B. Rogers, of Mercer county; J. H. Shanklin, Stephen Peery, Geo. W. Moberly, Wm. Dunlap, M. V. Thompson, of Grundy county; J. B. Bell, Smith Turner, of Livingston county. After the election, the directors met and organized by unanimously electing the following officers: President, J. H. Shanklin; Vice President, Wm. B. Rogers; Secretary, Ira B. Hyde; Treasurer, R. B. Ballew. All of the former directors and officers were re-elected.

The following named gentlemen were on the 8th instant elected directors of the Rensselaer & Saratoga Railroad Company: George H. Cramer, Geo. B. Warren, Joseph M. Warren, John A. Griswold, William Howard Hart, Troy; Benjamin E. Bates, Boston; Cornelius Van-

derbilt, LeGrand B. Cannon, William H. Vanderbilt, Thomas Dickson, Abial A. Low, George Talbot Olyphant, J. Pierpont Morgan, New York. At a subsequent meeting of the board the following officers were elected: President, George N. Cramer; Vice-President, Joseph M. Warren; Executive Committee, the President, LeGrand B. Cannon, William H. Vanderbilt.

W. H. Bixby, late operator of the Western Union Telegraph Company at Hornellsville, Pa., has accepted an appointment as Train Dispatcher of the Chicago, Burlington & Quincy Railroad Company, at Galesburg.

The following are the directors of the Memphis & Kansas City Railroad Company: William Byers, L. B. Gause, William Story, L. N. Rhodes, W. A. E. Tisdale, J. W. Eldridge, Elisha Baxter, Arkansas; R. F. Patterson, H. S. Lee, L. D. McKissick, B. B. Waddell, John Overton, Jr., William G. Ford, Tennessee.

The officers recently elected are: William Byers, of Independence county, Ark., President; J. W. Eldridge, of Arkansas, Vice President and Acting Secretary; R. G. Patterson, of Memphis, Tenn., Treasurer.

At a meeting of Directors of the Jacksonville, Pensacola & Mobile Railroad Company, on the 6th inst., the resignation of Colonel James G. Gibbs, Chief Engineer, was received, and the Board resolved, "that, in order to retain to some extent the valuable services and professional skill of Col. Gibbs, he be requested to act as Consulting Engineer for the company."

Mr. J. A. Greene was then elected Chief Engineer, and was instructed to organize such a field force as he shall deem necessary to complete the location of the line to Mobile at the earliest practicable time.

The President was authorized to purchase iron and do such other things as in his judgment he deems necessary to extend the road to the Spanish Hole. Or, if after further investigation it is deemed best for the interest of the company, then to extend to James' Island, or some other point on the Gulf.

It was determined that the rate of passage shall be fixed at five cents per mile.

It was also ordered that all free passes be recalled on the first of July next.

The New York Shipowner's Associations (rooms No. 51 Pine street) have elected the following named officers for the present year: President, Gustavus A. Brett; First Vice President, D. Colden Murray; Second Vice President, John C. Dale; Treasurer, William D. Morgan; Corresponding Secretary, Wm. Eelson, Jr.; Recording Secretary, S. C. Cornish; Executive Committee, Edward Hincken, Lemuel Brown, George F. Bulley, Stephen W. Carey, Lewis S. Davis, David R. De Wolf, James W. Elwell, Francis M. French, Jed Frye, Christian F. Funah, Allston Wilson, A. Foster Higgins, Robert Mackie, John T. B. Maxwell, Charles H. Marshall, Wm. Nelson, Jr., Ambrose Snow, George L. Tapscott, James A. Van Brunt, John S. Williams, Charles L. Wright; Arbitration Committee, Nathaniel D. Carille, Cornelius Comstock, James W. Elwell, Jed Frye, Episto P. Fabbri, James H. Frothingham, Robert Mackie.

Mr. J. M. Davies, General Passenger Agent of the North Missouri Railroad Company has resigned his office and Mr. James Charleton, General Ticket Agent, will hereafter attend to the duties of both offices.

George W. Cushing, for some years Master Mechanic of the Wisconsin Division of the Chicago & Northwestern Railway, and one of the most capable men of his profession, has accepted an appointment as Master of Machinery of the Kansas Pacific Railway, and leaves to-morrow to enter upon his duties. There are not many, even among master mechanics, who so thoroughly understand their business as does Mr. Cushing, and there is no doubt of his qualifications for the very important position to which he has been appointed, where he will have charge of the rolling stock on 770 miles of railroad. Mr. Cushing has designed some of the finest locomotives ever built in America, such as the "Bartholomew," (which ran 53 miles in 50 minutes), the "Rufus Hatch," and the "John B. Turner," one of which was figured in *London Engineering* as an excellent example of American locomotives.

#### PERSONAL.

It is reported that the health of Edgar Thomson, President of the Pennsylvania Railroad Company, is so poor that it is probable that he will soon resign his office in which case doubtless, he would be succeeded by Thomas A. Scott, the First Vice President, who has for some time had a very large share in the administration of the company's officers.

L. P. Dodge, Secretary of the Master Mechanics' Association, has lately finished a tour of the South, where he has been collecting information and statistics for the association. He will now make a visit to California for the same objects. Railroad officials should give him every facility in the way of furnishing complete statistics.



PUBLISHED EVERY SATURDAY.

## CONTENTS.

Page.	Page.
Switch Signals.....289	GENERAL RAILROAD NEWS.
CONTRIBUTIONS.	Old and New Roads.....295
Hints on Track Repairs, by	Elections & Appointments.....297
Wm. S. Huntington.....289	Personal.....297
Dead Weight.....290	Register of Earnings.....299
Railroad Curves.....290	Resolutions of the California Teachers' Excursion 299
SELECTIONS.	EDITORIALS.
Cheap Transportation.....289	The Fast Trains to New York.....296
Baltimore and the West.....291	The Missouri, Kansas & Texas Railway.....296
The Master Car Builders' Convention.....292	The Pennsylvania and the Erie.....296
Liability of Common Carriers for losses caused by Freezing.....292	New Operating Organization of the Chicago & Northwestern.....296
Burlington and her Right Railroads.....293	Railroad Chinese.....299
Railroad Earnings in May and from Jan. 1. to June.....293	The Rock Island Report.....299
Toledo, Wabash & Western Railway.....293	NEW PUBLICATIONS.....299
Estimating Earthworks.....294	CHICAGO RAILROAD NEWS.....299
The Effect of the Supreme Court Decision on Michigan Railroads.....294	ANNUAL REPORTS.
A Foreigner's Impression of American Railroads.....302	Chicago, Rock Island & Pacific.....300
	Mobile & Ohio.....301

## Editorial Announcements.

**Correspondence.**—We cordially invite the co-operation of the Railroad Public in affording us the material for a thorough and worthy Railroad paper. Railroad news, annual reports, notices of appointments, resignations, etc.; and information concerning improvements will be gratefully received. We make it our business to inform the public concerning the progress of new lines, and are always glad to receive news of them.

**Articles.**—We desire articles relating to railroads, and, if acceptable, will pay liberally for them. Articles concerning railroad management, engineering, rolling stock and machinery, by men practically acquainted with these subjects, are especially desired.

**Inventions.**—Those who wish to make their inventions known to railroad men can have them fully described in the RAILROAD GAZETTE, if not previously published, FREE OF CHARGE. They are invited to send us drawings or models and specifications. When engravings are necessary the inventor is expected to furnish his own engravings or to pay for them.

Our Prospectus and Business Notices will be found on the last page.

## THE FAST TRAINS TO NEW YORK.

We announced in detail last week the preparations which had been made to put a fast train on the Lake Shore & Michigan Southern and the Michigan Central roads, leaving this city at one o'clock in the afternoon and running through to New York in twenty-seven hours.

All the preparations had been made, and it was fully intended to put on the train last Monday, when, almost at the last moment, a telegram from New York announced that the New York Central had determined not to put on the train as yet. Of course that settled the matter, as it is the Central's fight, and roads west of Buffalo are comparatively disinterested, and, we believe, opposed to running at such speed, so far as they are concerned. Not that they distrust their ability. The arrangements completed made it almost certain that they would be able to make that time as readily as they make their present schedule. Indeed, by decreasing the number of stops, starting after noon, and thus saving the time given for dinner, the train would have to run no more miles per hour than does the present fast train. Having made all their preparations and being confident of success, the managers at this end of the line were sorry to have the trial put off, especially as it is supposed that it must be made soon.

A week ago there were reports from New York that the Pennsylvania's fast line was not making its time, but we believe that all parties are now satisfied that its fast train does run between New York and Chicago in twenty-seven hours, with, at least, reasonable regularity. Its managers are confident that they can do considerably better than this even; but of course they will not be likely to increase their speed until their rivals have equaled it.

It was expected, and probably intended, when this train was put on, that it would run very light. But it has unexpectedly, found remarkable favor, and not unfrequently has six or seven cars filled. Indeed travel is quite heavy, and in spite of the reduction of rates the passenger receipts of some of the lines at least are quite equal to those of last year at the same time.

One thing has been well demonstrated by these fast trains, and that is the excellent condition and careful and skillful management of all the trunk lines. Not long

ago such speed could not have been maintained without accident. It is well that we are able to extract so much consolation from this costly experiment. There have been rumors that rates would be restored soon, and others that the contest would be confined hereafter to the passenger business; but there seems to have been no good authority for any of these reports, and we continue to expect nothing, yet not to be surprised at anything.

## THE MISSOURI, KANSAS &amp; TEXAS RAILWAY.

Probably most railroad men, even, attach no very definite significance to the name which appears at the head of this article. Indeed, the name is not sufficiently descriptive to enable one to form any definite idea of the location of the road to which it belongs. Moreover, it is even younger than the road, being in that quite the opposite of most lines, which frequently have names for a dozen or fifteen years before they have anything else—except officers. But the road in question had a hundred miles in operation before it had this name. It was originally known as the Southern Branch Union Pacific Railroad, and was chartered by Congress, we believe, as a connection between the South and the road to California. It was to join the Union Pacific at the 100th meridian and extend in a southeasterly direction to or towards Memphis.

A considerable land grant was given it, and probably this is what has secured its construction; for it could hardly have tempted capital to construct it as one of half a dozen outlets to a railroad whose entire traffic, as yet, is exceptionally small. However that may be, the men who were interested in the road commenced building it at Junction City, on the Kansas Pacific 138 miles west of Kansas City, and have never made any nearer approach to the Union Pacific. On the other hand they have extended a line in the opposite direction, that is, nearly due southeast. It reaches the Neosho Valley at Emporia, 61 miles from Junction City, and continues in the valley of that stream and near to it across Southern Kansas to the Indian Territory less than 30 miles west of the Missouri line, where it now has its terminus. The total length of the road is about 180 miles, but to Chetopa, the nearest station to the Indian Territory, the distance is 177½ miles from Junction City. The country through which it runs is one of the choicest parts of Kansas, and though it was but two years ago in large part uninhabited, it is now quite thickly settled throughout its whole extent, the great influx of immigrants this spring having occupied nearly all the desirable lands which were offered at low prices. The stations on this road and their distances from Junction City are as follows. Travelers, shippers and others may make a note of them. Skiddy, 11 miles; Parker's, 22; Council Grove, 35; Big John, 39; Rock Creek, 43; Americus, 51; Emporia, 59½; Neosho Rapids, 67½; Hartford, 73; Ottumwa, 81; Burlington, 87; LeRoy, 97; Neosho Falls, 105; Humboldt, 119½; New Chicago, 129; Ladore, 149½; Dayton, 158½; Labette City, 161; Oswego, 168; Chetopa 177½.

This is the frontier railroad of Southern Kansas, and was lately the western boundary of civilization; not that there have been no settlements further west, but that there have been, until this season, no general occupation of large districts far beyond it. Now, however, the desirable government lands open to occupation have been quite generally claimed for fifty or sixty miles further west.

The direction of the Missouri, Kansas & Texas Railway seems unaccountable at first sight, and further consideration doesn't help the matter any, until something is learned of the plans of the proprietors. It runs through a country settled almost exclusively by people from the East and North, who have many dealings with Kansas City, Leavenworth, Chicago and St. Louis, and very few indeed with Colorado and California. Yet when the traveler is at Kansas City he is almost as far from the northern as from the southern terminus of this railroad, and, to reach any point on it he must first go west of it on the Kansas Pacific, and then travel eastward. So we find at this day travelers who live at Chetopa, on this road, crossing by stage to Columbus, on the Missouri River, Fort Scott & Gulf road, and taking that line to Kansas City, for the sake of saving time. But the location of the road will not appear so bad when it is completed in all its parts. It is intended to build from some point on the line (Humboldt, we believe,) eastward through Fort Scott to a connection with the Missouri Pacific. This will at once give a direct outlet to the part of the road north of the junction, and one sufficiently direct for the rest of the line.

The extension of the line southward through the Indian Territory to Texas is the other part of the plan. This will depend chiefly upon the action of Congress and the Indians occupying the territory. But with it or without it the road is likely to attract a considerable

share of the Texas cattle trade, especially in that of cattle driven northward to be fed on the plains of Northern Kansas and Nebraska, and this is a business which promises to become a very large one very soon. To accommodate this most completely the road should be extended northward as well as southward. Then it could play a large part in the carrying of animals from the plains of Texas where they are bred to the more northern districts where they may be fed, and again from these latter to the eastern markets.

## THE PENNSYLVANIA AND THE ERIE.

Considerable surprise has been manifested that the Pennsylvania Railroad Company should give any facilities or form any kind of an alliance with the Erie Company during the present contest. It has been generally understood, and, indeed, it has been evident enough, that the Pennsylvania has been as much as any company hostile to the Erie, and has thwarted it repeatedly in some of its most important schemes. It has even been reported that the conflict is not so much between the Pennsylvania and the New York Central as by the Pennsylvania and the New York Central against the Erie, which, being crushed between the upper and the nether mill-stone, would be out of the way of both companies, leaving to be divided between them the business which it has hitherto had.

It seems to have escaped those who have formed this opinion that, however the stockholders or managers of the Erie Railway may suffer, the road and rolling stock will remain. The company may become bankrupt, the managers unable to pay even their operating expenses, the property may be put up at auction to satisfy creditors, yet there will still remain the track from Dunkirk and Buffalo to New York, which some one must own. It is, of course, not to be believed that the roads will continue to do their business at less than cost until one is absolutely worn out. Yet this would be necessary if it was intended to put the Erie Railway out of the way.

But, the road being in operation and sure to be operated by some individual or corporation, the important question is, who shall have it? It is quite possible that the Pennsylvania Company has no liking for Gould and Fisk, that it would very much prefer some other management, even if it were a hostile management; but it is quite certain that it is not willing to see Fisk and Gould driven out to make room for Vanderbilt. Against any such event it is bound to contend, and while it may give nothing for the benefit of Erie, it may be very generous to defeat the schemes of Vanderbilt. The New York Central is strong enough now; commanding all the rail routes between Buffalo and New York, it would almost monopolize the lake business. So long as the Erie has an independent management—no matter what its character or its temper towards the Pennsylvania—the New York Central cannot have the entire lake traffic to support it and strengthen it for further conquests.

## New Operating Organization of the Chicago &amp; Northwestern.

Quiet reigns in the general offices of this company, varied occasionally by the sound of heads falling into the basket. For it is announced that a strictly and severely economical policy will be pursued and the expenses are to be reduced to the minimum compatible with efficient operation. Many things are surmised, but few are yet announced. It is believed that there will be a considerable reduction in the number of general officers, and also of subordinates, and it is hinted that the larger salaries will be reduced.

At a meeting of the directors a week ago the resignation of Mr. Pierson as Vice President was accepted. No successor was chosen, and probably none will be, and the company will have but one Vice President, Mr. M. L. Sykes, Jr., of New York who was elected Second Vice President at the late annual meeting. Mr. George L. Dunlap, the General Superintendent, was appointed General Manager, with, we believe, extensive powers, something like those exercised by Perry H. Smith, when he was Vice President of the company.

John C. Gault, late Assistant General Superintendent, with charge of the freight department, was appointed General Superintendent to succeed Mr. Dunlap. There is no question as to the wisdom of these appointments. Both of these officers are perfectly familiar with the company's property and business, and are men of great capacity for business and administrative skill. Mr. Tracy could not find more efficient officers. And it seems to be the policy generally, not to make new appointments, but to retain the old employees as far as possible. That is, where removals are made, it is not for the purpose of making vacancies for new appointees, but in order to reduce the force and the expenses of the company.

Of course when so many removals occur, no reflection

tions attach to those retiring, and we have no doubt that many very capable men will be among them. It is also not improbable that where many changes are made some mistakes will occur, and occasionally the saving of a salary will be false economy. But every legitimate effort to secure economy in operation is praiseworthy. The community, as well as the company will profit by it; and mistakes, if any are made, in carrying out such a policy are always excusable.

The only changes we can announce this week are the appointment of Mr. C. C. Wheeler, late Superintendent of the Milwaukee Division, as General Freight Agent, thus succeeding to the duties of Mr. Gault. Mr. Wheeler's division is assigned to Mr. A. A. Hobart, Superintendent of the Wisconsin Division, in addition to the lines in his charge heretofore.

Mr. Cushing whose appointment as Master of Machinery of the Kansas Pacific we have noticed elsewhere, had resigned some time previously, and his retirement and the appointment of Mr. Tilton as his successor have nothing to do, we believe, with the new organization.

As the story papers say, "to be continued next week."

#### Railroad Chinese.

A San Francisco railroad man sends us a lithographic sheet containing (we take his word for it) the latest time table of the California Pacific Railroad. It is headed "California Pacific Railroad and Steamer New World, via Vallejo, California," and has a handsome lithograph engraving, representing a train, steamer, station, etc. The remainder of the sheet explains itself readily—to those familiar with the Chinese language and literature. Our Chinese editor being absent, we refrain from presenting a translation of the document. As for giving it in the original, we tried that last winter with a smaller poster of the same kind. We cannot say that it did not attract attention, but we have never been able to learn that the California Pacific Railroad gained any passengers by that advertisement. But as the Chinamen have begun to come in this direction, it may not be long before railroads in the Mississippi Valley, as well as those on the Pacific slope, will need such advertisements.

#### The Rock Island Report.

We call attention to the annual report of this company for the year ending March 31, the chief part of which will be found on another page. The document is quite full in its statistics and presents a very favorable record. This is especially true as to the improvements and extensions of the road. While the road has been earning a good interest on the investment, it has been very greatly improved during the year, and the prospects for future earnings are altogether flattering. More than one third of the entire amount charged to operating expenses was for repairs of roadway and track and new iron for repairs and renewals. With the Chicago & Southwestern completed, and the country on the Iowa line developed, very few roads in agricultural districts can reasonably hope for a heavier traffic.

#### Resolutions of the California Teachers' Excursion.

Our readers will remember that about the first of this month an excursion party of California teachers, nearly 300 in number, passed through this city on their way to New York. Probably no excursion of anything like the size of this was more elegantly and comfortably accommodated, more attentively served, or more successfully conducted. Everything passed smoothly and satisfactorily, and the consequence was that the members of the party were enthusiastic in their commendations of the railroads and railroad officers by whom they were served.

Witness the following resolutions, which were passed by the members of the excursion party, June 2d, 1870, at a meeting of which Judge S. S. Wright, of San Francisco, was President, and George O'Doherty, Secretary. They were offered by Hon. John Swett, ex-Superintendent of Public Instruction of the State of California.

*Resolved*, That we tender to the general officers of the Central Pacific and the Union Pacific railroad companies our sincere thanks for transporting with comfort, safety and dispatch, the largest excursion party that ever crossed, by rail, the Sierra and the Rocky Mountains.

*Resolved*, That we return to Samuel A. Lewis, the California Agent of the Burlington & Missouri River Railroad, our cordial thanks for his assistance in arranging the details of our excursion, and that we gratefully acknowledge the courtesy of the general officers of this excellent road, and particularly of Messrs. Touzalin and Hitchcock, in providing the most splendid train of Pullman palace cars that ever ran from Omaha to Chicago.

*Resolved*, That we express to the general officers of the Pittsburgh, Fort Wayne & Chicago, and the Pennsylvania Central route, our unbounded satisfaction with their liberal arrangements in providing for us so magnificent a train of Pullman and Silver Palace Sleeping cars over their line between Chicago and New York—a route which, for the perfect condition of its double track, the substantial character of its macadamized road bed, for its iron bridge, for the speed and safety with which its trains are moved, for the great variety

of its scenery from the rich prairies, beautiful rivers and valleys to the grandeur of the passage over the Alleghany Mountains—stands without a rival.

*Resolved*, That we all unite in acknowledging the obligations under which we have been placed by the unceasing care and attentions of Thomas L. Kimball, General Western Passenger Agent of the Pennsylvania Railroad, who accompanied us from San Francisco, and that we carry with us most pleasing recollections of his character, both as a railroad officer and a gentleman.

*Resolved*, That the Chairman of the Committee of Arrangements be requested to forward a copy of these resolutions to the officers of the various roads mentioned.

#### NEW PUBLICATIONS.

*Cram's Railroad, County and Township Map of the Western States*, gives the States of Ohio, Michigan, Indiana, Illinois, Wisconsin, Minnesota, Iowa, Missouri, Kentucky, a large part of Canada, Nebraska, Dakota, Kansas, West Virginia, and Tennessee, and the eastern ends of Pennsylvania and New York; that is, it gives the country as far east as Buffalo, as far west as North Platte, far enough north to include Houghton and Duluth and nearly half of Lake Superior, and far enough south to show Nashville and Knoxville. It is colored by counties and well finished and mounted. The territory given includes a vast number of railroads, and an attempt has been made to give all the new lines. Very generally this has been successful, and most of the new lines are given correctly. We see, however, that unbuild roads are sometimes given, including some not even in progress, such as the line from Genoa to Elkhorn, Wis., and the abandoned line from the Southern Minnesota, near Lanesboro, to Rochester; other lines are only anticipations, and are likely to be correct in course of time, such as the Southern Minnesota, between Lanesboro and Ramsey; the Leavenworth, Lawrence & Galveston, between Garnett and Humboldt; the line from Oregon to Rochelle; from Flint, Michigan, some thirty miles eastward; the Michigan Air Line, from Three Rivers to Jackson, to the Springfield & Northwestern, between Beardstown & Ashland; the Davenport & St. Paul, from DeWitt to Maquoketa. There are several omissions in the part of the map west of Chicago, especially in Indiana.

The map contains more general matter than most railroad maps, such as streams, towns which are not stations, etc. This makes it more valuable for many purposes, but causes it to be a little too much crowded.

The same map is published on two sheets, one giving the country west, and the other the country east of Chicago. They are published by Geo. F. Cram & Co., No. 148 Lake street, Chicago.

*Blanchard's Railroad Map of the Northwest* has lately been issued in a new and corrected edition, and very much improved by an addition of the country east of Chicago as far as Buffalo, and including the great lakes. In this form it gives at one view the territory with which Chicago merchants have their chief dealings, and is valuable because it is so comprehensive. The map is large without being clumsy; it is colored by counties, and is not overcrowded with names. Remarkable pains have been taken to give railroads correctly, and we can say, after a pretty careful examination and with a pretty complete knowledge of the extent and location of railroad lines, that it approaches perfection in that particular, in very few instances omitting completed, and generally avoiding the more serious, but not less common error, of giving projected lines as completed; though there are some errors in that respect which are not easily accounted for, especially with regard to certain Michigan lines, now not likely to be built for years, if at all.

A feature which will be appreciated is the presentation of the lakes. Most of the maps we have had hitherto were cut short off a few miles east of Chicago, and it was not easy to find the relations of this city to the coast towns, especially those on the east side of Lake Michigan, with which it has a large and growing business. On this map the route of a vessel can be traced between any two ports.

The map is published by Rufus Blanchard, at No. 146 Lake street, Chicago. We believe that no better map of the kind exists.

*The National Car-Builders* is the title of a new monthly journal, published by Vose, Dinsmore & Co., the well-known manufacturers of car springs, the first number of which, dated July, 1870, was published in time for distribution among those present at the Master Car Builders' Convention. This number has four quarto pages, a little smaller than those of THE RAILROAD GAZETTE, and a very handsome tinted cover. Indeed it is very handsome altogether. The publishers promise to pay special attention to all matters connected with the construction of railroad cars and to encourage a full and free discussion of all questions in controversy. The chief value of the paper to the publishers, doubtless, will be as a medium for advertising its manufactures. But it by no means follows that it will be valuable to no one else. We have no doubt that every car-builder will welcome it. As "proof of the pudding is in the eating," we give the following extract from the salutatory, which we call—and have called before—sound doctrine:

"Yet with all the improvements which have thus far been made, we feel warranted in saying that the present style of car building is not so complete as to leave nothing further to be desired. New adaptations and modifications will be made as experience may suggest or necessity require. The methods of ventilation, heating, and lighting are doubtless as perfect as they might be; and the prevailing style of decoration is likely to undergo a change for the better. The tawdry and fantastic will gradually be discarded and give place to a style in which mere varnish, gilding and color will be subordinated to more correct principles of taste. Wood as a material may in time be superseded by iron, involving changes in the details of the vehicle by which greater strength will be secured, and less liability to breakage in the event of collision or displacement from the track."

The offices of publication are at No. 1 Barclay street, New York, and No. 15 La Salle street, Chicago. The subscription price is 50 cents per year.

## Chicago Railroad News.

### Chicago, Burlington & Quincy.

The passenger movement towards the West, especially to Kansas, has fallen off somewhat, and naturally to be expected. Freight business continues good. About 100 cars of corn are received daily, and there is a heavy movement of lumber and agricultural implements to the West, and to Kansas especially. Shipments of Texas cattle have fallen off somewhat, on account of the low prices ruling, which the low rates of freight on live stock do not counterbalance.

The annual meeting of stockholders for the election of directors will be held at the office of the company in this city next Wednesday, the 29th instant.

### Pittsburgh, Fort Wayne & Chicago.

The latest circular of the Pittsburgh, Fort Wayne & Chicago Railway and the Pennsylvania Railroad, in this city, has one page advertising "Chicago, Crestline and Cleveland, via Pittsburgh, Fort Wayne & Chicago and 'Bee' line from Crestline, connecting at Cleveland with trains on the Atlantic & Great Western Railway, for all points reached by that road." It gives a time-table by which it appears that the fast train leaving Chicago at 11 o'clock in the morning reaches Cleveland at 10:35 p. m. of the same day, and New York at 9:50 p. m. of the next day; the Pacific express, leaving Chicago at 5:15 p. m., arrives at Cleveland at 7:30 a. m., the next morning, and New York at 7:10 of the second morning; and the night express, leaving Chicago at 9:00 p. m., arrives at Cleveland at 3:50 p. m. the next day, and at New York at 4:10 p. m. of the second day. This is now the Erie's regular Chicago connection.

The fast line is making its trips to New York in 27 hours with commendable safety and regularity. It is also attracting a great many travelers and giving them good satisfaction.

### Michigan Central.

The passenger business, as perhaps is to be expected in this time of very low fares, is very large, and the fast train which leaves at 11:30 a. m., frequently has six or seven cars filled, which are as many as it is easy to haul with one locomotive. The reputation for safety which this line has earned by long immunity from accidents attracts many and leads them to trust themselves on the fastest trains on the line.

The annual meeting of the stockholders for the election of officers will be held in Detroit next Wednesday, the 29th instant.

### Illinois Central.

Last Sunday a new Hyde Park train was put on leaving the city at 11:10 p. m., and arriving fifteen minutes after midnight. This train enables the residents of Hyde Park to spend the evening in the city, at places of amusement or elsewhere, and return the same evening.

The night express train no longer takes a car for Keokuk. Passengers for that place or other points on the Toledo, Peoria & Warsaw Railroad west of Chenoa will take the morning express, leaving Chicago at 9:30 a. m.

### Personal.

H. W. Hubbell, for a long time conductor of the Aurora accommodation train on the Chicago, Burlington & Quincy Railroad, and a very popular man in that position, has been made ticket agent for the road in the Central Depot in this city.

George W. Cushing, Master Mechanic of the Wisconsin Division of the Chicago & Northwestern Railway, and one of the most accomplished mechanical engineers and practical mechanics of the Northwest, has resigned his position. Last Tuesday the employees of the shops presented him a magnificent Jules Jurgensen watch with a heavy gold chain, a solid silver tea service, and several other articles, as testimonials of their esteem. The watch, chain and tea set cost \$900. Mr. Cushing has served the Northwestern Company nine years, and has not only made a reputation as a most capable officer, but has gained the affection and esteem of his subordinates to a remarkable degree. More than two hundred of these assembled at his house at the time of the presentation. Mr. Cushing, as elsewhere announced, goes to the Kansas Pacific Railway as Master of Machinery. It is gratifying to see a man of such ability, who is also conscientious and modest, valued at his true worth.

Mr. Cushing is succeeded by George W. Tilton, who was Master Mechanic of the Galena Division until about a year ago, when he retired and became a member of the firm of Holden & Tilton, machinists and founders.

#### REGISTER OF EARNINGS.

FOR THE SECOND WEEK OF JUNE.		
Chicago & Northwestern, (1,157 miles) 1869.....	\$305,496	
" " " (1,157 miles) 1870.....	277,321	
Decrease (10 4-5 per cent.).....	\$28,175	
Milwaukee & St. Paul, (936 miles) 1870.....	\$193,137	
" " " (835 miles) 1869.....	154,508	
Increase (8 4-5 per cent.).....	\$38,629	
Chicago & Alton, (465 miles) 1870.....	\$119,144 95	
" " " (431 " " ) 1869.....	100,645 71	
Increase (24 per cent.).....	\$18,499 27	
Michigan Central, (229 miles) 1869.....	\$78,228 20	
" " " (234 miles) 1870.....	71,676 79	
Decrease (6 per cent.).....	\$6,551 41	

—During the week ending June 16, there was shipped from Negaunee, on the Peninsula Division of the Chicago & Northwestern Railroad, 2,124 car loads of iron ore, and 270 tons of pig iron.

## CHICAGO, ROCK ISLAND &amp; PACIFIC RAILROAD.

Annual Report of the President and Superintendent  
for the Year Ending March 31, 1870.

We are indebted to Superintendent Riddle for an advance copy of the annual report, which we present in an abridged form:

## PRESIDENT'S REPORT.

Since the date of the last Annual Report your railroad was opened for business to the Missouri River at Council Bluffs, on the 7th day of June, 1869, as promised therein, and has been constantly operated since that time with a fair degree of success. The extreme wet summer and fall of 1869 has increased the expenses of keeping up the track on the new part of the road above what may be expected in the future.

The new bridge across the Mississippi river, the building of which is in charge of the United States, has progressed slowly, but it is expected that it will be completed within a year from this time. The company have not been required to expend any money in connection with it except for the purchase of property for right of way (about \$80,000), which has been charged to construction account.

The bonds of the Railroad Bridge Company, the payment of which were guaranteed by the Chicago & Rock Island Railroad Company, and by the Mississippi & Missouri Railroad Company, became due on the 10th of January last, and have been provided for entirely by this company.

By the terms of agreement between the two Companies, the Mississippi & Missouri Railroad Company should have paid one-half the amount, and it is supposed that this company have a legal claim for that amount against the Mississippi & Missouri Railroad Company, and if so, under the ruling of the Circuit Court of the United States in a case where that company was a party, it is believed that it may eventually be collected.

It will be seen by reference to the report of the General Superintendent, that there has been expended for construction and equipment during the year the sum of \$2,581,063.84, the details of which are fully set out therein. It should be observed, however, that considerable of this sum is for work done and materials supplied prior to April 1st, 1869, which had not then been estimated and paid for. It will be perceived that a large increase of motive power and rolling stock has been made, both by purchase and construction in the company's shops, but still more is required, and the necessity for an increase will be constant with the increase of business. The company now operate 598½ miles of road, and the tonnage is and will continue to be largely increased.

The Superintendent states that the general condition of the motive power is materially improved, and the rolling stock fully maintained. His report and the tables attached thereto are very full and complete and to them I refer for detail.

The gross receipts for the year ending March 31, 1870, were.....	\$5,995,306 30
The gross expenditures, properly chargeable to earnings, were.....	3,456,791 34
Leaving net earnings.....	\$2,538,474 96
Interest on bonds, dividends and rent Peoria & Bureau Valley Railroad.....	2,066,951 57
Leaving surplus net earnings.....	\$ 471,523 39
Balance of income account, March 31, 1869.....	1,597,344 02
Balance of income account, March 31, 1870.....	\$3,068,767 41

The tables attached hereto will fully exhibit all the details upon which the foregoing figures are made.

Ninety miles of track have been relaid during the past year. The company have about thirty miles of track laid with steel rails, and it is the intention to continue to add thereto. The opinion of the Superintendent in relation to the use of steel rails is fully endorsed by the Board of Directors from past experience.

## LAND GRANT.

The land grant made by the United States and by the State of Iowa to the Mississippi & Missouri Railroad Company and to this company, has been all adjusted, except in one land district in Iowa, of such lands as were acquired by Act of Congress of June, 1864, (estimated at 15,000 acres), and it is expected by the Land Commissioner that this will be disposed of at the General Land Office very soon. That done (and there being the amount so estimated), the company will have obtained under the grants and purchase 552,649 acres to which the title is deemed clear from any difficulty. There is also about 50,000 acres known as "rejected swamp selections," which have been certified by the United States, but there is a question whether the company can hold it. Most of the lands belonging to the company are in the counties west of Des Moines, and are generally of good quality. The completion of the road to Council Bluffs has made the lands accessible for settlement, and sales have been commenced. The policy of the company thus far has been to sell only to those who desired actually to settle upon and cultivate them. To such, inducements are offered by fair prices and liberal terms. There have been disposed of up to April 1st, 1870, about 14,000 acres, and sales since that time have been increasing.

## CHICAGO &amp; SOUTHWESTERN RAILWAY.

Some two years since a project was started to build a railroad from Leavenworth, Kansas, in a north-east direction, to connect with the railroad of this company at such point as might be deemed most desirable. A company was organized in Missouri, under the laws of that State, and one subsequently in Iowa, under its laws, which two companies were afterwards consolidated in accordance with the laws of the two States. Work was commenced at the west end, and had progressed to a considerable extent before the consolidation. Application was then made to this company to guarantee the bonds of the consolidated company to the extent of \$30,000 per

mile, and not to exceed \$5,000,000, the proceeds of which it was alleged, with the stock subscriptions that would be obtained, would build a first class railroad and complete every part of it ready for the rolling stock. In June last several of the directors visited Leavenworth and made an examination into the matter, and subsequently the Chief Engineer of this company made an examination of the country through which the line would pass. From those examinations and other information obtained, it was believed that there was no doubt that when the road was built and in operation it would certainly earn enough net to pay the interest upon the bonds as well as a fair surplus, and that it would prove a valuable feeder to the road of this company. It was finally decided to connect the road with that of this company at Washington, the present terminus of the branch from Muscatine, making the line from Leavenworth to Washington about two hundred and fifty miles in length. Negotiations commenced and were continued until it was agreed that this company would guarantee the bonds to the extent heretofore stated. At about the same time a contract was made by that company, with responsible parties, for the construction of the entire line on such terms that no doubt existed of the ability of the company to comply with its conditions, if the bonds could be sold and the money realized therefrom. The bonds were prepared, secured by a first mortgage upon all the property of the company present and prospective, and were guaranteed by this company. It is understood that nearly all the bonds are sold, and that there is no doubt of the company's ability to comply with its contract for construction. From Leavenworth to Cameron, about fifty miles, the road is nearly completed. The remainder of the road is to be built from the east end. The grading to Fairfield, a distance of twenty-eight miles, is nearly completed, and work is going on west of Fairfield. It is expected that track-laying will immediately commence, and be pushed forward vigorously. The contract requires the completion of the entire line by November 1st, 1871, and it is the intention of the contractors to finish it before that time. All proper safeguards are inserted in the contract between the two companies to insure the application of the proceeds of the bonds so that the money shall be applied *pro rata* to each section of the entire line.

The bonds and proceeds thereof, are held by this company, and paid over upon the order of its President, upon satisfactory estimates of the work done and the location thereof. A sufficient amount is set aside to pay for the superstructure of the whole line. It is expected that this company will equip and operate the road upon such terms as are just and equitable, to be agreed upon hereafter. There are proper clauses in the contract to ensure a running arrangement, by which the business of that line going east of Washington, shall pass over the line of this company, whether or not it is operated by it. Other clauses there are and acts done by which for several years at least, this company can easily insure itself that the contract shall be fully complied with. On the whole, it is believed by all the directors, that its construction and operation will add very largely to the earnings of your line, and no principle is better settled than that when a railroad will likely prove self-sustaining and be a valuable feeder to another railroad company, that company is perfectly justified in taking the risks of the guaranty to insure its construction.

## ASSETS OF THE COMPANY WHICH DO NOT APPEAR IN THE TABLES ATTACHED TO THE REPORT.

Several years since, as a matter of policy, the company purchased certain stocks and bonds of the Sterling & Rock Island and Warsaw & Rockford railroad companies, at a cost of about \$170,000, which was paid from the earnings of this company, and after a time was charged to profit and loss account. This property is worth now all its cost and probably more, and from present appearances will likely soon be disposed of.

There is also on the debit side of the balance sheet, "securities in the hands of the Treasurer as trustee, etc.," \$50,845 25, out of which are to be paid \$14,000 income bonds, and "sundry balances," \$7,132 82, and the balance, about \$30,000, will go to profit and loss account.

There are also certain securities held by the company, arising from items heretofore charged off to profit and loss, which are now valued at about \$350,000; a portion of which are in Mississippi River Bridge bonds, bonds of this company, and bonds and stock of the Peoria, Pekin & Jacksonville Railroad Company.

In addition to these items there is as before stated, about 552,000 acres of land. Taking these items together, it is believed that the company has assets over and above what is shown by the tables attached hereto, from which will be realized at least four millions of dollars.

JOHN F. TRACY, President.

CHICAGO, June 1st, 1870.

## REPORT OF THE GENERAL SUPERINTENDENT.

Mr. Hugh Riddle, the General Superintendent, reports as follows:

The road was opened to business to the Missouri river in the month of June, 1869, but owing to the unusually wet season in Iowa, rendering it difficult and expensive to maintain the new portion of the track in running order, the unavoidable delays in perfecting an organization, and obtaining an equipment to meet the requirements of the through traffic over an increased length of line, and the comparatively unsettled condition of the country west of Des Moines, all tended to produce a result less encouraging than may reasonably be expected in the future.

The movement of passengers, when compared with the previous year, shows a gratifying increase of over forty per cent., and the revenue derived therefrom an increase of thirty-eight per cent.

The freight traffic in consequence of the partial failure of the grain crop in Iowa, and the depressed state of the markets has not fully met our expectations.

The gross receipts and expenditures of the company for the year ending March 31st, 1870, were as follows:

RECEIPTS.	
From Passengers.....	\$1,788,369 73
From Freight.....	3,587,008 30
From Mails.....	50,331 53
From Express.....	91,351 53
From Rents.....	84,412 64
From Interest on Loans, etc.....	394,506 79
Total.....	\$5,995,306 30

EXPENDITURES.	
Operating Expenses.....	\$3,376,367 30
Legal Expenses.....	19,381 25
Taxes on Real Estate.....	118,849 94
United States Government Tax.....	44,452 85
Total.....	\$3,456,791 34

Net Earnings.....	\$2,538,474 96
Rent of Peoria & Bureau Valley Railroad.....	\$ 195,000 00
Interest on Bonds.....	615,650 00
Dividends, including tax.....	1,236,311 57
Total.....	\$3,066,951 57

Surplus Earnings.....	\$471,523 39
Percentage of operating expenses to gross earnings.....	\$54.64
Percentage of operating expenses including legal expenses and taxes.....	87.66

In explanation of the increased percentage of operating expenses as compared with the previous year, it is proper to state that the labor applied and materials used in repairs of cars, track, bridges, buildings and fixtures, was greatly in excess of that used in 1868 and '69. The item of new and re-rolled rails alone showing an increase of 4,288 tons, amounting to \$190,758 64.

The establishing of new agencies in New York, Boston, California, Colorado and various other places, with the advertising, printing coupon tickets, forms, &c., &c., incident to a thorough business, has added considerably to the operating expenses.

There has been expended during the year on account of construction and equipment, as follows:

Land and Land Damages.....	\$109,608 18
Equipments.....	585,075 31
Engineering and Contingent Expenses.....	11,377 61
Grading.....	473,367 83
Superstructure and Bridging.....	399,737 57
Fencing.....	73,669 07
Station Buildings, Shops and Fixtures.....	179,536 30
New shops—Chicago—including Machinery and Tools.....	78,531 40
Construction Repairs.....	535,338 63
Total.....	\$2,561,663 84

The amount charged above to grading, superstructure, bridging, fencing, station buildings, shops and fixtures, was mainly expended in completing that portion of the road west of Des Moines, and includes the cost of buildings and structures.

Construction repairs includes the expenditures made in substituting masonry for timber, piers and trestle bridges, permanent buildings and frost-proof water tanks, for those of a temporary character, cutting down the steep grades at Davenport and Iowa City bluffs, and for sundry items amounting to \$538,823.68.

There are now in use 11½ miles of second track, viz.: From Seneca to Marseilles, 4¾ miles; from De Pue to Bureau, 4¼ miles; from Moline to Rock Island, 2½ miles; total, 11½.

In addition to the above, about 12 miles is mostly graded and can be made ready for the superstructure at small expense. At Davenport Bluffs cut, 145,839 cubic yards of earth have been removed and placed in the embankment, at a cost of \$76,687.00, and the grade reduced from 140 to 53 feet per mile. 33,166 cubic yards have been taken from the Iowa City cut at a cost of \$9,966.75.

The company own—

From Chicago to Missouri River (main line).....	400 miles.
" Wilton to Washington (Washington Branch).....	50¼ "
Total.....	549¾ miles.

And lease—

Bureau to Peoria (Bureau Valley Railroad).....	46¾ miles.
--	------------

Total miles operated.....	590 miles.
Miles of Side Track.....	98 "

Miles of Main Line and Sidings.....663

The track renewals were as follows:

Track re-laid with with new iron rails.....	31.64 miles.
" " with re-rolled rails.....	43.85 miles.
" " with steel rails.....	15.73 miles.
Total.....	90.31 miles.

Total steel rail now in use.....39.9 miles.

Nothing has occurred since the date of the last annual report, to change the opinion therein expressed of the economy and expediency of using steel rails, and contracts have been made for the delivery of three thousand (3,000) tons of English Bessemer steel rails, and one hundred (100) tons of "Booth's steel-capped rail," the coming season.

This, with the worn out iron rails re-rolled, it is anticipated will be sufficient to maintain the track in its present good condition, and fully meet the requirements arising from wear and depreciation.

During the past year—

The average cost per ton in currency for steel rails.....	\$133 70
" " " " new iron rails.....	84 75
" " " " re-rolling iron rails.....	35 07

It is confidently asserted that lower rates will be obtained for purchases of rails made for use the coming season.

The Howe truss bridges have been rebuilt, and trestle bridges have been renewed with masonry; 4 with arch culverts; 17 with abutments and timber stringers.

The equipment of the company consists of 133 locomotives, 10 sleeping coaches, 53 day coaches, 3 railway post office cars, 23 baggage, mail and express cars, 260 stock cars, 1,695 box cars, 745 platform cars, 54 caboose cars, 2 pile driving cars, 1 wrecking car, 1 pay car, 40 dump gravel cars, and 177 hand cars, and 152 truck cars for construction and track repairs.

Of the above locomotives, 125 are coal burners, and 8 use wood. There have been added during the year by purchase, 24 locomotives and 253 freight cars, at a cost of \$496,050 63; and by construction in company's shop, 2 locomotives, 7 sleeping coaches, 7 day coaches, 5 baggage and mail cars, and 105 freight cars, at a cost of \$304,164.46—all charged to equipment account.



### A Foreigner's Impressions of American Railroads.

A correspondent of *The Hub* gives as follows his experience on American and foreign railroads:

You have proposed to me as a foreigner to write down some remarks about my journey from New York to Boston, and my first impressions of American travel, as compared with European. I will try to do it.

Some ten years ago, when making my first trip through a foreign country, I came one warm summer noon to Vervier, a small town on the boundary between Prussia and France. The Prussian railway ends there, and the French one begins. The passengers have to step out of the black-red-yellow painted cars, pass through the station building, and step in on the other side in cars bearing French emblems. It is, however, not only signs and colors which are changed, but also the language of the officers, their bearing and their manners in dealing with the passengers. In passing through the station-building one has passed from one country to another, from one people to another, and so striking is the difference that one cannot help feeling that something of a people's character is to be read on their railroads. The Prussian officer always haughty and supercilious, considers the passengers a battalion of soldiers, who are under this command as long as they are on the railroad. The French officer, always polite and generous, considers himself the host to a society of gentlemen. In my native land, Denmark, the railroad officer is a cautious and somewhat solemn person, who thinks the passengers to be children, and feels himself responsible, not only for their comfort but also for their good behavior. If one wishes some small favor as to his luggage, or in other respects, the Prussian officer can be bribed by a glass of beer and some small silver coin secretly slipped down in his huge, hungry pocket. The French officer may be allured by a compliment or a well-turned witticism. The Danish officer can neither be bribed nor allured, but he can be frightened. In this connection I longed for seeing an American railroad with all its busy life.

The first aspect, however, was not very inviting. In Europe the railroad stations are the most splendid specimens of modern architecture, and it is, indeed, often ridiculous to see the poor, timid, sometimes stupid European peasants stroll about in these large halls, where rise flights of marble steps between high iron columns which lift lively-colored cupolas far above. The station at Twenty-seventh street, New York, is not a building at all; it is only a dirty hole to run through. And as to the company I had to associate with during the journey, the first object my eye fell upon was a printed notice above the door: "Beware of pickpockets." If I were a policeman, I would have that notice taken down, or I would not be a policeman any longer.

The reality, however, was much better than the appearance. The Americans seem not to care much about beauty; yet they are very eager to make everything useful to the highest degree. In this way they often reach a straightforwardness and naturalness in their works, which, indeed, is a true and real beginning of beauty, and often surprises very pleasantly, while in Europe one is often much tired with the show of meaningless beauties. The American railway cars are better constructed, better ventilated, and nicer furnished than the European cars of the same rate. It is a great advantage with the American car that it has only two doors, one at each end of the car, and a comfortable passage through the middle of the room, from one door to the other. The European car, on the contrary, is for every second row of seats divided in small rooms, each room having two doors, one on each side of the car, and these doors are—from a cause I dare not mention but which you will easily find out yourself—conscientiously flung open every time when the car stops. The sitting in these cars is therefore at once narrow, as if one was enclosed in a bird-cage, and yet open to all the winds, as if one was placed on the very street-corner, while the American car is cosy and comfortable, and gives freedom to move from one place to another, as if it was one's own sitting-room. In the winter it is heated, which I have never observed on any railway on the European continent, not even in Norway, and it carries with it another indescribable accommodation, the lack of which causes the most ludicrous scenes on every European station where the train stops. And as the cars are better the company is still more so. People talked, and smoked, and jested freely but politely, each man claiming re-

spect for himself, but also paying respect to others. None were sleeping, nor drunk, nor obtrusive. And with none I saw that stupid curiosity and still more stupid fear which the European peasants so often exhibit when riding on a railroad. The American feels easy and comfortable in the neighborhood of a steam-engine, and it may perhaps be said, half to his praise and half to his blame, that he is himself something of a steam-engine.

#### Homogeneous Rails.

The Chief Engineer of the Allegheny Valley Railroad, H. Blackstone, Esq., in his report to the company, makes the following comparison between iron and steel rails:

In regard to the durability of iron rails I have never seen a rail perfectly homogeneous worn out; neither have I ever heard any civil engineer say that he had, and I have frequently asked the question. In speaking of these things to a prominent iron manufacturer of this city, he kindly proposed to furnish to this company a couple of iron rails made from his common merchant bar. These were received and laid on the track in March 1868, and on the opposite side of the track were laid steel-headed rails, manufactured in Michigan. Both were laid at a point where it was supposed they would receive the roughest service. In less than six months some of the steel rails were given out, and shortly after they were lifted and Brady's Bend rails supplied. These were worn out, and others were supplied and worn out, while the two rails furnished by the party above referred to, remain in the track apparently little the worse of the service.

#### Steel Rails.

The President of the Baltimore & Ohio Railroad Company in his last annual report says:

The experience of the company in the use of steel rails has resulted very favorably. Steel rails laid in 1864, where the wear had been great, and frequent renewals of iron had been required, continue still in excellent condition. The great durability of steel, compared with iron rails, will make the comparative ultimate cost, in roads with heavy traffic, much in favor of the former. During the past year 2,717 tons of steel rails have been placed in our tracks, and arrangements have been made for a large additional quantity for the current year.

Negotiations are now taking place for the establishment of a communication between the Hungarian and Roumanian railways. The Roumanian Government has expressed its willingness to accept Count Beust's proposal for making the pass of Ottoza one of the points of connection, provided the Austrian Government will consent to the formation of other connecting lines through Orsova and the Vulcan Pass. The latter line, being the shortest road from the Hungarian coal mines to the Danube, will probably be accepted, but the former has met with much opposition, as it offers no advantage for Hungarian interests. As for the long-pending question of the connection of the railways of Turkey and Servia, it has at last been settled in conformity with the desire of the Servian regency. A line is to be constructed from Belgrade to Salonica, in communication with another from Pesth to Belgrade via Kikinda. This will ultimately be the shortest road for goods conveyed from Western Europe to India via Suez, and Pesth and Belgrade are to be made the central depots for such goods. —*London Railway News.*

OFFICE OF THE  
RED RIVER CONSTRUCTION COMPANY,  
Minneapolis, Minn., June 16, 1870.

#### Notice to Contractors.

Proposals will be received by the Red River Construction Company, at its office in Minneapolis, for the grading, bridging, trestle and timber work, piling and furnishing ties on the First Division of the Northern Pacific Railroad across the State of Minnesota, (a distance of 230 miles,) at any time after the 25th day of June, 1870; and the work will be awarded and commenced as fast as the line of railroad is located by the Railroad Company's Engineers.

Two-thirds of the line is through a timbered country, and is excellent winter work. The soil is principally loam, sand and gravel. Proposals are invited from contractors of ability and experience, in sections of from one to forty miles. Profiles of the work can be seen at the office of this Company. The entire work is to be completed by the first day of July, 1871.

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The Great Western Company invite tenders for about 5,000 tons of old and partially worn-out iron rails, delivered at their dock, at Windsor, in one month, commencing 15th of August next.

The rails are of the usual flange pattern, fish-jointed, four inches high, four inches breadth of base, weighing 65 lbs per yard.

Terms—Cash on delivery. Sealed tenders will be received (in gold or United States currency), and must be sent to the undersigned on or before 15th July next.

JOSEPH PRICE, Treasurer, &c.  
CHIEF OFFICES,  
HAMILTON, ONTARIO, 27th May, 1870.  
JOHN S. NEWBERRY, President.  
E. C. DEAN, Treasurer and Manager.

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Secor's Patent Pen Racks, Embossing Seals, with Changeable Date, Secor's Patent Writing and Shipping Ink in all Colors.

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## Mercantile Agency,

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### THEIR NEXT VOLUME,

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No. 73 Broadway, cor. Rector St.  
**Capital, - - 1,000,000.**

[All paid in and securely invested.]

INTEREST ALLOWED ON DEPOSITS, which may be drawn at any time.

This Company is by law and by the order of the Supreme Court made a legal depository of money. It will act as Receiver in cases of litigation, take charge of, and guarantee the safe keeping of all kinds of Securities, and collect coupons and interest thereon.

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In giving special prominence to this department of its business, attention is particularly called to the paramount advantages of employing this COMPANY in the capacity of AGENT, TRUSTEE, RECEIVER or TREASURER, in preference to the appointment of INDIVIDUALS. A guarantee capital of ONE MILLION DOLLARS specially invested by requirement of its charter, and a perpetual succession; a central and permanent place of business, where business can be transacted daily, without disappointment or delay; its operations directed and controlled by a responsible Board of Trustees; and its entire management also under the supervision of the Supreme Court and the Comptroller of the State.

Permanency, Constant and Responsible Supervision, Guaranteed Security and Business Convenience and Facilities, may therefore be strongly urged in its favor on the one hand, against the Uncertainty of Life, the Fluctuations of Business, Individual Responsibility and General Inconvenience on the other.

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HENRY K. BOGERT, Vice-President.

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## FIRE PROOF SAFE

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**IMPROVED "I" BEAMS,  
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Best Quality of

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"Linville & Piper's Patent"  
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WALTER KATTE, Western Agent.

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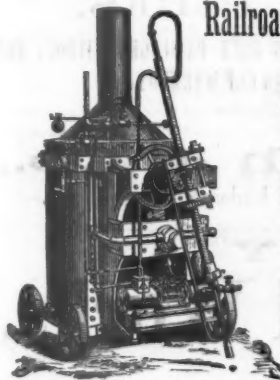
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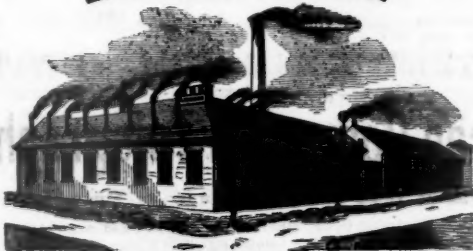
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AFTERNOON PASSENGER, from Milwaukee Div. Depot, 5:00 P. M.  
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Manufacturers of IMPROVED HEAD-LIGHTS for Locomotives, Hand and Signal Lamps, Car and Station Lamps, Brass Dome Castings, Dome Mouldings, Cylinder Heads, and Car Trimmings, of Every Description.



## Pan-Handle

—AND—

## Penn'a Central Route East!

SHORTEST AND QUICKEST ROUTE, VIA COLUMBUS, TO

PITTSBURGH, BALTIMORE, PHILADELPHIA & NEW YORK

On and after Saturday, JANUARY 1st, 1870, Trains for the East will run as follows:

[DEPOT CORNER CANAL AND KINZIE STS., WEST SIDE.]

6:45 A. M. NEW YORK EXPRESS.

[SUNDAYS EXCEPTED.] Arriving at

COLUMBUS... 8:51 P. M. HARRISBURG... 2:30 P. M. NEW YORK... 10:36 P. M. WASHINGTON... 1:00 P. M. PHILADELPHIA... 7:00 P. M. BALTIMORE... 7:00 P. M. CITY... 10:00 P. M.

7:45 P. M. NIGHT EXPRESS.

[SATURDAYS EXCEPTED.] Arriving at:

COLUMBUS... 11:10 A. M. HARRISBURG... 5:30 A. M. NEW YORK... 12:05 P. M. WASHINGTON... 1:00 P. M. PHILADELPHIA... 9:40 A. M. BALTIMORE... 9:00 A. M. BOSTON... 11:50 P. M.

Woodruff's Palace Day and Sleeping Cars

Run Through to COLUMBUS, and from Columbus to NEW YORK, WITHOUT CHANGE!

ONLY ONE CHANGE TO NEW YORK, PHILADELPHIA, OR BALTIMORE!

TRY THE NEW ROUTE. FARE AS LOW AS BY OTHER LINES.

## CINCINNATI & LOUISVILLE AIR LINE SOUTH.

42 Miles the Shortest Route to Cincinnati,

18 Miles the Shortest Route to Indianapolis and Louisville.

—FROM ONE TO—

2 Hours the Quickest Route to Cincinnati!

THE SHORTEST AND BEST ROUTE TO

Columbus, Chillicothe, Hamilton, Wheeling, Parkersburg, Evansville, Dayton, Zanesville, Marietta, Lexington, Terre Haute, Nashville, ALL POINTS IN CENTRAL & SOUTHERN OHIO, & INDIANA, KENTUCKY & VIRGINIA.

—QUICK, DIRECT AND ONLY ALL RAIL ROUTE TO—

New Orleans, Memphis, Mobile, Vicksburg, Charleston, Savannah,

AND ALL POINTS SOUTH.

Cincinnati, Indianapolis and Louisville Trains run as follows:

THROUGH WITHOUT CHANGE OF CARS!

6:45 A. M. 7:45 P. M.

(Sundays excepted) Arriving at

LOGANSFORT... 12:10 P. M. LOGANSFORT... 1:30 A. M.  
KOKOMO... 1:40 P. M. KOKOMO... 3:40 A. M.  
CINCINNATI... 2:40 P. M. CINCINNATI... 10:00 A. M.  
INDIANAPOLIS... 4:50 P. M. INDIANAPOLIS... 6:00 A. M.  
LOUISVILLE... 11:30 A. M. LOUISVILLE... 8:30 P. M.

Lansing Accommodation: Leaves 3:45 P. M. Arrives 9:15 A. M.

## PULLMAN'S PALACE SLEEPING CARS!

Accompany all Night Trains between Chicago and Cincinnati or Indianapolis.

Ask for Tickets via COLUMBUS for the East, via HAGERSTOWN for Cincinnati, and via KOKOMO for Indianapolis, Louisville and points South. Tickets for sale and Sleeping Car Berths secured at 95 RANDOLPH STREET, CHICAGO, and at Principal Ticket Offices in the West and Northwest.

WM. L. O'BRIEN,  
Gen. Pass. and Ticket Agent, Columbus.

I. S. HODSDON,  
Northwestern Pass. Agt., Chicago.

## KANSAS PACIFIC RAILWAY.

Great Smoky Hill Route!

—TO—

COLORADO, NEW MEXICO, ARIZONA, UTAH,

Montana, Nevada, California and Northern States of Old Mexico.

COMPLETED THROUGH KANSAS, TO

Carson, Colorado, 487 Miles West of Kansas City and Leavenworth.

Close Connections are made with Express Trains of the HARRISBURG & ST. JOSEPH and NORTH MISSOURI RAILROADS, at KANSAS CITY, and with MISSOURI PACIFIC RAILROAD at STATE LINE.

DAILY EXPRESS TRAINS are run between

KANSAS CITY, LEAVENWORTH, LAWRENCE,

Topeka, Wamego, Manhattan, Junction City, Salina, Brookville, HARKER, HAYS and CARSON.

Pullman's Sleeping Cars Attached to Night Express Trains!

Passenger Time from Kansas City to Denver, Less than 50 Hours.

Hughes & Co.'s Four-Horse Concord Coaches leave Carson daily for Denver, Central City, Georgetown, &c.

Southern Overland Passenger Express and Mail Coaches leave Carson daily for Fort Lyon, Pueblo, Trinidad, Fort Union, Las Vegas, Santa Fe, &c.

Ask for Through Tickets via Kansas Pacific Railway, "Smoky Hill Route." Freight and Passage Rates as Low and Time as Quick as by any other Route.

R. B. GEMMELL, Gen. Ticket Agent. A. ANDERSON, Gen. Supt.

THE FAVORITE THROUGH PASSENGER ROUTE!

## Chicago, Burlington & Quincy RAILROAD, AND CONNECTIONS.

### 3 THROUGH EXPRESS TRAINS DAILY.

FROM CHICAGO	Hours.	1st Class Fare.	FROM CHICAGO	Days.	1st Class Fare.
To OMAHA, -	- 23	\$20.00	To DENVER, -	- 2 1/2	\$70.77
" ST. JOSEPH, -	21	19.50	" SACRAMENTO, -	4 1/2	118.00
" KANSAS CITY, -	22	20.00	" SAN FRANCISCO, -	5	118.00

TRAINS LEAVE CHICAGO from the Great Central Depot, foot of Lake Street, as follows:

### BURLINGTON, KEOKUK, COUNCIL BLUFFS AND OMAHA.

**7:40 A. M. MAIL AND EXPRESS.** (Daily except Sunday,) stopping at all stations between Chicago and Burlington; making close connections at Mendota with Illinois Central for Amboy, Dixon, Freeport, Galena, Dunleith, Dubuque, LaSalle, El Paso, Bloomington, &c., &c.

**10:45 A. M. PACIFIC EXPRESS.** (Daily except Sunday,) stopping only at Riverside, Hinsdale, Aurora, Leland, Mendota, Princeton, Rock Island Crossing, Buda, Kewanee, Galva, Galeburg, and Monmouth, between Chicago and Burlington. **PULLMAN PALACE DRAWING ROOM CAR** attached to this train daily from Chicago.

TO COUNCIL BLUFFS AND OMAHA, WITHOUT CHANGE!

**11:30 P. M. NIGHT EXPRESS.** (Daily, except Saturday,) stopping at all principal stations between Chicago and Burlington. **ELEGANT DAY COACHES**, and a **PULLMAN PALACE SLEEPING CAR** are attached to this train from Chicago to Burlington, without change! This is the only route between

### CHICAGO, COUNCIL BLUFFS & OMAHA,

— RUNNING THE CELEBRATED —

Pullman Palace Dining Cars!

The Shortest, Best, Quickest and only Route between

### CHICAGO & KEOKUK,

Without Ferrying the Mississippi River!

### QUINCY, ST. JOSEPH, LEAVENWORTH AND KANSAS CITY.

**10:45 A. M. PACIFIC EXPRESS.** (Daily, except Sunday,) with **PALACE COACH** attached, running through from Chicago to KANSAS CITY, without change!

**5:00 P. M. EVENING EXPRESS.** (Daily, except Sunday,) with **Pullman Palace Drawing Room Sleeping Car** attached, running through from Chicago to QUINCY, without change!

**11:30 P. M. NIGHT EXPRESS.** (Daily, except Saturday,) with **Pullman Palace Sleeping Car** attached from Chicago to GALESBURG; **PALACE DAY COACHES** from Chicago to QUINCY, without change!

This is the Shortest, Quickest and only Route between

### CHICAGO AND KANSAS CITY,

WITHOUT CHANGE OF CARS OR FERRY.

THE SHORTEST, BEST AND QUICKEST ROUTE BETWEEN CHICAGO AND

### St. Joseph, Atchison, Weston, Leavenworth,

AND ALL POINTS ON THE KANSAS PACIFIC R.R.

**Local Trains Leave:** (RIVERSIDE & HINSDALE ACCOMMODATION, 7:00 A. M. 1:30 & 6:15 P. M. **MENDOTA PASSENGER**..... 4:15 P. M. **AURORA PASSENGER**..... 5:30 P. M.

**Trains Arrive:**—Mail and Express, 3:45 p. m.; Atlantic Exp., 4:15 p. m., except Sunday; Night Exp., 9:05 a. m., except Monday; Mendota Passenger, 10:00 a. m.; Aurora Passenger, 8:15 a. m.; Quincy Passenger, 7:30 P. M.; Riverside and Hinsdale Accommodation, 6:30 and 9 a. m. and 3:30 p. m., except Sunday.

Ask for Tickets via Chicago, Burlington & Quincy Railroad, which can be obtained at all principal offices of connecting roads, and at Company's office in Great Central Depot, Chicago, at as low rates as by any other route.

**ROBT HARRIS,** Gen'l Superintendent, CHICAGO. **SAM'L POWELL,** Gen'l Ticket Agent, CHICAGO. **E. A. PARKER,** Gen. West. Pass. Agt., CHICAGO.

### PASSENGERS GOING WEST!

To Missouri, Kansas, Nebraska, Colorado or New Mexico, Should Buy Tickets via the Short Route

### HANNIBAL & ST. JOSEPH R. R. LINE.

Three Express Trains from Quincy or Macon to St. Joseph.

— ALSO DIRECT —

### To Kansas City

WITHOUT CHANGE OF CARS!

CONNECTIONS ARE CLOSE AND DIRECT FOR

### ATCHISON, WESTON & LEAVENWORTH.

CONNECTIONS:

**AT KANSAS CITY,** with Kansas Pacific Railway, for Lawrence, Ottawa, Topeka, Fort Riley Junction City, Fort Hays, Sheridan, &c.

**AT KANSAS CITY,** with Kansas City, Fort Scott, and Galveston Railroad, for Fort Scott, Fort Gibson, Galveston, &c.

**AT ST. JOSEPH,** with St. Joseph & Council Bluffs Railroad, ALL RAIL from St. Joseph to

### Nebraska City, Council Bluffs & Omaha.

**AT OMAHA,** with Nebraska Union Pacific Railroad, for Fort Kearney, Julesburg, Cheyenne, Laramie, Benton, &c.

**AT COUNCIL BLUFFS,** for Sioux City, all Rail.

By this Line, passengers have choice of Overland Routes, either via Smoky Hill or Platte Route To Denver, Central City, Salt Lake, Sacramento, California and all points in the Mining Regions.

Daily Overland Coaches via Smoky Hill Route leave Sheridan, end of U. P. R. R., for Santa Fe and New Mexico.

Through Tickets for Sale at all Ticket Offices.

**P. B. GROAT,** Gen. Ticket Agent. **GEO. H. NETTLETON,** Gen. Supt. **HENRY STARRING,** Gen. Agent, Chicago.

Old, Reliable, Air-Line Route!

## CHICAGO, ALTON & ST. LOUIS R. R.

SHORTEST, QUICKEST AND ONLY DIRECT ROAD TO

### Bloomington, Springfield, Jacksonville, Alton,

— AND —

## ST. LOUIS!

WITHOUT CHANGE OF CARS.

THE ONLY ROAD MAKING IMMEDIATE CONNECTIONS AT ST. LOUIS, WITH MORNING AND EVENING TRAINS

— FOR —

### ATCHISON, LEAVENWORTH, KANSAS CITY,

Lawrence, Topeka, Memphis, New Orleans,

And All Points South and Southwest.

TRAINS leave CHICAGO from the West-side Union Depot, near Madison Street Bridge.

<b>EXPRESS MAIL,</b> [Except Sundays].....	8:10 A. M.
<b>LIGHTNING EXPRESS,</b> [Except Saturdays and Sundays].....	9:50 P. M.
<b>NIGHT EXPRESS,</b> [Except Saturdays].....	6:00 P. M.
<b>JOLIET ACCOMMODATION,</b> [Except Sundays].....	4:40 P. M.
<b>JACKSONVILLE EXPRESS,</b> [Daily].....	6:00 P. M.

Trains arrive at Chicago at 8:00 P. M., 8:30 A. M. and 6:00 A. M. Joliet Accom., 9:40 A. M.

This is the ONLY LINE Between CHICAGO &amp; ST. LOUIS RUNNING

Pullman's Palace Sleeping and Celebrated Dining Cars!

BAGGAGE CHECKED THROUGH.

Through Tickets can be had at the Company's office, No. 55 Dearborn street, Chicago, or at the Depot, corner of West Madison and Canal streets, and at all principal Ticket Offices in the United States and Canada. Rates of Fare and Freight as low as by any other Route.

**A. NEWMAN,** Gen. Pass. Agent.**J. C. McMULLIN,** Gen. Supt.

## North Missouri R. R.

PASSENGERS FOR

### KANSAS AND THE WEST,

ARE REMINDED THAT

THE NORTH MISSOURI R. R.

— IS —

11 MILES SHORTER than any other Route!

BETWEEN

St. Louis and Kansas City.

15 Miles Shorter between ST. LOUIS and LEAVENWORTH

— AND —

49 MILES SHORTER TO ST. JOSEPH!

THAN ANY OTHER LINE OUT OF ST. LOUIS.

Three Through Express Trains Daily!

Pullman's Celebrated Palace Sleeping Cars on all Night Trains!

FOR TICKETS, apply at all Railroad Ticket Offices, and see that you get your Tickets via St. Louis and North Missouri Railroad.

**C. N. PRATT,** Gen. Eastern Agt., 111 Dearborn st. CHICAGO.**S. H. KNIGHT,** Gen. Superintendent, ST. LOUIS.**JAS. CHARLTON,** Gen. Pass. and Ticket Agt., St. Louis.

## Pacific Railroad of Missouri.

THE MOST DIRECT AND RELIABLE ROUTE FROM ST. LOUIS THROUGH TO

### KANSAS CITY, LEAVENWORTH & ATCHISON,

WITHOUT CHANGE OF CARS!

Close Connections at KANSAS CITY with Missouri Valley, Missouri River, Ft. Scott & Gulf, and Kansas Pacific Rys. for Weston, St. Joseph, Junction City, Fort Scott, Lawrence, Topeka, Sheridan, Denver, Fort Union, Santa Fe, and

### ALL POINTS WEST!

At SEDALIA, WARRENSBURG and PLEASANT HILL, with Stage Lines for Warsaw, Quincy, Bolivar, Springfield, Clinton, Osceola, Lamar, Carthage, Granby, Neosho, Baxter Springs, Fort Gibson, Fort Smith, Van Buren, Fayetteville, Bentonville.

PALACE SLEEPING CARS on all NIGHT TRAINS.

Baggage Checked Through Free!

THROUGH TICKETS for sale at all the Principal Railroad Offices in the United States and Canada. Be Sure and Get your Tickets over the PACIFIC R. R. OF MISSOURI.

**W. B. HALE,** Gen. Pass. and Ticket Agt.**THOS. McKISSOCK,** General Superintendent.

THREE HOURS IN ADVANCE OF ALL OTHER ROUTES!

Sixty-One Miles the Shortest Line! Only 27 Hours!

— FROM —

CHICAGO TO NEW YORK.

Pittsburgh, Ft. Wayne &amp; Chicago and Pennsylvania Central

IS THE ONLY ROUTE RUNNING ITS ENTIRE TRAIN THROUGH TO PHILADELPHIA AND NEW YORK, AND THE ONLY ROUTE RUNNING

THREE DAILY LINES OF PULLMAN'S DAY AND SLEEPING PALACES,

— FROM CHICAGO TO —

PITTSBURGH, HARRISBURG, PHILADELPHIA &amp; NEW YORK,

WITHOUT CHANGE!

WITH BUT ONE CHANGE TO

BALTIMORE, PROVIDENCE, NEW HAVEN,  
HARTFORD, SPRINGFIELD, WORCESTER AND BOSTON!

And the Most Direct Route to Washington City.

Trains Leave WEST SIDE UNION DEPOT, corner West Madison and Canal Streets, as follows:

LEAVE:	Mail	Fast Express	Pacific Exp.	Night Exp.	VALLEY ROUTE
CHICAGO	5.50 A. M.	11.00 A. M.	5.15 P. M.	9.00 P. M.	4.30 P. M.
PLYMOUTH	9.50 " "	1.50 P. M.	9.10 " "	2.15 A. M.	4.30 P. M.
FORT WAYNE	13.40 P. M.	3.30 " "	11.30 " "	5.30 " "	4.30 P. M.
LIMA	3.15 " "	" "	1.35 A. M.	8.10 " "	4.30 P. M.
FOREST	4.37 " "	" "	2.40 " "	9.40 " "	4.30 P. M.
CRESTLINE	6.00 A. M.	5.55 " "	4.30 " "	11.05 P. M.	4.30 P. M.
MANFIELD	6.42 " "	7.16 " "	5.00 " "	12.34 " "	4.30 P. M.
ORRVILLE	9.05 " "	8.42 " "	6.45 " "	1.37 " "	4.30 P. M.
ALLIANCE	10.45 " "	9.55 " "	8.40 " "	3.55 " "	4.30 P. M.
ROCHESTER	D. 3.05 P. M.	12.17 A. M.	10.52 " "	6.08 " "	4.30 P. M.
PITTSBURGH	2.15 " "	12.50 " "	12.45 P. M.	7.26 " "	4.30 P. M.
BLAIRSVILLE BRANCH	6.05 " "	" "	3.37 " "	10.43 " "	4.30 P. M.
JOHNSTOWN	6.56 " "	" "	4.38 " "	11.43 " "	4.30 P. M.
CRESSON	7.53 " "	" "	5.45 " "	12.35 A. M.	4.30 P. M.
ALTOONA	9.05 " "	8.40 " "	6.45 " "	1.45 " "	4.30 P. M.
HUNTINGDON	10.21 " "	" "	7.04 " "	2.59 " "	4.30 P. M.
LEWISTOWN	11.44 " "	" "	8.23 " "	3.59 " "	4.30 P. M.
HARRISBURG	2.10 A. M.	8.33 " "	10.45 " "	5.30 " "	4.30 P. M.
LANCASTER	3.40 " "	P. M.	12.15 A. M.	7.00 " "	4.30 P. M.
DOWNTOWN	5.00 " "	" "	1.40 " "	8.16 " "	4.30 P. M.
ARRIVE:					
PHILADELPHIA	6.30 " "	12.30 " "	3.10 " "	9.40 " "	7.00 " "
NEW YORK, VIA PHILADELPHIA	10.41 " "	3.00 " "	6.43 " "	1.00 P. M.	10.35 " "
NEW YORK, VIA ALLENTOWN	" "	3.50 " "	" "	12.05 P. M.	" "
BALTIMORE	" "	12.10 " "	4.30 " "	9.00 A. M.	7.00 " "
WASHINGTON	" "	3.40 " "	5.50 " "	1.00 P. M.	10.00 " "
BOSTON	9.00 P. M.	5.50 A. M.	6.05 P. M.	11.50 " "	" "

BOSTON AND NEW ENGLAND PASSENGERS will find this Route especially Desirable, as it Gives them an opportunity of Seeing the FINEST VIEWS AMONG THE ALLEGHANY MOUNTAINS,

Besides Visiting PITTSBURGH, PHILADELPHIA and NEW YORK, without extra cost!

All New England Passengers holding Through Tickets, will be Transferred, with their Baggage, to Rail and Boat Connections in NEW YORK, WITHOUT CHARGE.

Close Connections Made at Lima for all Points on the Dayton &amp; Mich. and Cin., Hamilton &amp; Dayton R'ys,

And at CRESTLINE, for CLEVELAND, ERIE, DUNKIRK, BUFFALO, NIAGARA FALLS, and all Points reached via Lake Shore R. R.

THROUGH TICKETS FOR SALE AT THE COMPANY'S OFFICES, N.W. COR. RANDOLPH &amp; LA SALLE ST.,

65 and 52 Clark St., Cor. Randolph and Wells St., (under the Briggs House,) and at Depot, Chicago; also at Principal Ticket Offices in the West.

F. R. MYERS, Gen. Pass. and Ticket Agt, P. &amp; F. W. R'y, Chicago. W. C. CLELAND, Gen. Western Pass. Agt, P. Ft. W. &amp; O. R'y, Chicago.

T. L. KIMBALL, Gen. Western Pass. Agent, Penn. Central R. R., Chicago.

## WHAT IS SAID OF THE RAILROAD GAZETTE.

"A very neat publication in point of appearance, and, as it always has been, is now a reliable, interesting and accurate journal, ably edited in its various departments." Our scissors have wandered over its columns "many a time and oft," and always with gratifying results. — *Buffalo Commercial Advertiser*.

"The news is very full, the discussions are conducted in good temper and with excellent information. No judge from this first number, the conductors of the Gazette know what 'railroading' is, and what a proper weekly journal should be." — *New York World*.

"One of our most valuable exchanges. . . . Its columns teem with reliable information of great benefit to railroad men of every section of the United States." — *Leavenworth Bulletin*.

"Full of information, scientific and general, with regard to railroads all over the country, their construction, operation, etc." — *Rochester Chronicle*.

"For railroad men and others wishing to keep themselves thoroughly posted on railroad matters we know of no better paper." — *Madison State Journal*.

"A most valuable thing to the engineer and all railway men, the capitalist, traveler, mechanic and general reader." — *Brooklyn (N. Y.) Argus*.

"As it devotes much attention to Southern railroad and industrial interests, it is always interesting to Southern readers." — *Gulf Coast News*.

"Has always been one of the best papers of the country for railroad intelligence." — *New York Commercial and Financial Chronicle*.

"In every respect a worthy representative of the energetic and go-ahead city where it is published." — *Onondaga Railroad Record*.

"Of great interest to railroad men, and almost equally so to those who use railroads." — *Marshall (Mich.) Statesman*.

"Makes a very handsome appearance and is full of valuable matter." — *Chicago Evening Post*.

"Every man who is at all interested in railroads would do well to take the GAZETTE." — *Jacksonville (Fla.) Independent*.

"It appears to be in many features the best journal of its class now extant." — *New York Official Railway News*.

"An impartial and independent journal, valuable to every railroad man." — *Parkersburg (W. Va.) Times*.

"It must prove a very valuable paper to stockholders and those who are interested in railroads." — *New York Globe*.

"Unquestionably the best railroad journal in the United States." — *Waukegan (Ill.) Patriot*.

"The best informed railway newspaper published in the West." — *Aurora (Ill.) Beacon*.

"A well-edited paper, showing industry and intelligence." — *American Railway Times*.

"Well worthy the patronage of all intelligent railroad men." — *Kalamazoo Gazette*.

"Replete with matters connected with railroading." — *Holmesburg (Pa.) Gazette*.

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"Equal in appearance to any technical journal of America." — *Albion (Pa.) Patriot*.

"Every railroad man reads the GAZETTE." — *Bloomington (Ill.) Leader*.

"A complete repository of railroad news." — *Harrisburg (Pa.) Patriot*.

"The best journal of its class in the United States." — *La Crosse Leader*.

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"Of great interest to railroad men." — *Delaware (O.) Gazette*.

Broad Gauge! Double Track!  
ERIE RAILWAY.

## 4 EXPRESS TRAINS DAILY!

From Cleveland, Dunkirk and Buffalo, 625 Miles, to New York, WITHOUT CHANGE of Coaches!

The Trains of this Railway are run in DIRECT CONNECTION WITH ALL WESTERN AND SOUTHERN LINES, for

Elmira, Williamsport, Oswego, Great Bend, Scranton, Newburgh,

NEW YORK, ALBANY, BOSTON, PROVIDENCE  
AND PRINCIPAL NEW ENGLAND CITIES.

New and Improved DRAWING ROOM COACHES are attached to the DAY EXPRESS Running THROUGH TO NEW YORK.

SLEEPING COACHES, Combining all Modern Improvements, with perfect Ventilation and the peculiar arrangements for the comfort of Passengers incident to the BROAD GAUGE, accompany all night trains to New York.

CONNECTIONS CERTAIN! as Trains on this Railway will, when necessary, wait from one to two hours for Western trains.

All Trains of Saturday run directly Through to New York.

Ask for Tickets via Erie Railway, which can be procured at 65 Clark Street, Chicago, and at all Principal Ticket offices in the West and Southwest.

L. D. RUCKER, A. J. DAY, WM. R. BARR,  
Gen'l Superintendent, New York; Western Passenger Agent, Chicago; Gen'l Passenger Agent, New York.

# LAKE SHORE — AND — MICHIGAN SOUTHERN R.W.

THE GREAT THROUGH LINE BETWEEN  
**CHICAGO, BUFFALO & NEW YORK,**  
WITHOUT CHANGE!

AND THE ONLY RAILWAY

RUNNING PALACE COACHES THROUGH!

— BETWEEN —

**CHICAGO & NEW YORK, via BUFFALO**

WITHOUT TRANSFER OF PASSENGERS!

All Trains Stop at Twenty-Second Street to Take and Leave Passengers.  
Baggage Checked at that Station for all Points East.

**4 EXPRESS TRAINS DAILY, [Sundays Excepted,] Leave**  
Chicago from the New Depot, on Van Buren St., at the head of La Salle Street, as follows

**7:30 A. M. MAIL TRAIN.**  
VIA OLD ROAD AND AIR LINE. SUNDAYS EXCEPTED.

Leaves 22d Street 7:45 A. M. Stops at all Stations. Arrives—Toledo, 6:20 P. M.

**11:30 A. M. SPECIAL NEW YORK EXPRESS,**  
— AIR LINE. SUNDAYS EXCEPTED.

Leaves—Twenty-Second Street, 11:45 A. M. Arrives—Elkhart, 2:55 P. M.; Cleveland 10:40 P. M.; Buffalo, 4:10 A. M.; New York, 5:30 P. M.; (Chicago Time) Boston, 11:45 P. M.

This Train has PALACE SLEEPING COACH Attached, Running

THROUGH TO ROCHESTER, WITHOUT CHANGE!

IN DIRECT CONNECTION WITH

Wagner's Celebrated Drawing-Room Coaches on N. Y. Central R. R.

Only Thirty Hours, Chicago to New York!

**5:15 P. M. ATLANTIC EXPRESS (Daily),**  
VIA OLD ROAD.

Leave—Twenty-Second Street 5:30 P. M. Arrives—Laporte, 8:10 P. M. (Stops 20 minutes for Supper); arrives at Toledo, 3:50 A. M.; Cleveland, 7:25 A. M. (30 minutes for Breakfast); arrives at Buffalo, 1:50 P. M.; Rochester, 5:10 P. M. (30 minutes for Supper); connects with Sleeping Coach running Through from Rochester to Boston Without Change, making but One Change between Chicago and Boston.

NEW AND ELEGANT SLEEPING COACH Attached to this Train, Running THROUGH from CHICAGO TO NEW YORK WITHOUT CHANGE! Arrives at NEW YORK, 6:40 A. M.

**9:00 P. M. NIGHT EXPRESS**  
VIA AIR LINE. (DAILY EXCEPT SAT. & SUN.)

Leaves—Twenty-Second Street, 9:15 P. M. Arrives—Toledo, 6:00 A. M. (30 minutes for Breakfast); arrives at Cleveland, 10:35 A. M.; Buffalo, 5:30 P. M.; New York, 11:00 A. M.; Boston, 3:30 P. M.

## KALAMAZOO DIVISION.

Leave Chicago 7:30 A. M. Arrive at Kalamazoo 3:15 P. M.; Grand Rapids, 8:15 P. M.

Leave Chicago 9:00 P. M. Arrive at Kalamazoo 4:40 A. M.; Grand Rapids, 10:00 A. M.

Elkhart Accommodation leaves Chicago, 3:30 P. M. Arrives at Elkhart, 8:20 P. M.

There being no heavy grades to overcome, or mountains to cross, the road bed and track being the smoothest and most perfect of any railway in the United States, this Company run their trains at a high rate of speed with perfect safety.

Travelers who wish to SAVE TIME and make SURE CONNECTIONS, purchase Tickets via

**LAKE SHORE & MICHIGAN SOUTHERN R'Y.**

THE ONLY LINE RUNNING THROUGH BETWEEN CHICAGO AND BUFFALO, WITHOUT TRANSFER, and in Direct Connection with NEW YORK CENTRAL RAILROAD and ERIE RAILWAY.

General Ticket Office for Chicago, No. 56 Clark Street.

**CHAS. F. HATCH,**  
General Superintendent, CLEVELAND, OHIO.

**F. E. MORSE,**  
General Western Passenger Agent, CHICAGO.

# ILLINOIS CENTRAL RAILROAD.

PASSENGER TRAINS LEAVE CHICAGO FROM THE GREAT CENTRAL DEPOT, FOOT OF LAKE ST

**ST. LOUIS AND CHICAGO**  
THROUGH LINE.

**9:30 A. M. DAY EXPRESS** Sundays Ex.  
Arriving in ST. LOUIS at 10:15 P. M.

This Train Reaches St. Louis ONE HOUR & FIFTEEN MINUTES in Advance of any other Route!

**8:30 P. M. FAST LINE.** Saturdays Excepted.  
Arriving at ST. LOUIS at 9:00 A. M.

AT ST. LOUIS, Direct Connections are Made FOR

Jefferson City, Sedalia, Pleasant Hill, Macon, Kansas City,  
**LEAVENWORTH, ST. JOSEPH & ATCHISON,**

—Connecting at KANSAS CITY for—

LAWRENCE, TOPEKA, JUNCTION CITY, SALINA, SHERIDAN, &c.

**CAIRO, MEMPHIS AND NEW ORLEANS LINE.**

**9:30 A. M. CAIRO MAIL,** Sundays Excepted.  
Arriving at Cairo 2:30 A. M., Memphis 12:40 P. M., Mobile 9:40 A. M., Vicksburg 9:30 A. M., New Orleans 11:10 A. M.

**8:30 P. M. CAIRO EXPRESS,** Except Saturdays.  
Arriving at Cairo 3:15 P. M., Memphis 2:30 A. M., Vicksburg 5:00 P. M., New Orleans 1:30 A. M.

**4:45 P. M. CHAMPAIGN PASSENGER,**  
Arriving at Champaign at 11:15 P. M.

THIS IS THE ONLY DIRECT ROUTE TO

Humboldt, Corinth, Grand Junction, Little Rock, Selma, Canton, Grenada, Columbus, Meridian, Enterprise,

**MEMPHIS, VICKSBURG, NEW ORLEANS & MOBILE.**

At NEW ORLEANS, connections are made for

**GALVESTON, INDIANOLA,**

And all Parts of Texas.

NOTICE—This Route is from 100 to 150 MILES SHORTER, and from 12 to 24 HOURS QUICKER than any other.

THIS IS ALSO THE ONLY DIRECT ROUTE TO

**DECATUR, TERRE HAUTE, VINCENNES & EVANSVILLE.**

**Peoria and Keokuk Line.**

**9:30 A. M. KEOKUK PASSENGER,** Sun. Excepted.  
Arriving at Chenoa 3:15 P. M., El Paso 4:05 P. M., Peoria 5:40 P. M., Canton 7:14 P. M., Bushnell 8:59 P. M., Keokuk 11:36 P. M., Warsaw 12:05 A. M.

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ATTACHED TO ALL NIGHT TRAINS.

**Spacious and Fine Saloon Cars!**  
WITH ALL MODERN IMPROVEMENTS, RUN UPON ALL TRAINS.

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For Through Tickets, Sleeping Car Berths, Baggage Checks, and information, apply at the office of the Company in the Great Central Depot, foot of Lake St.

**Hyde Park and Oakwoods Train.**

LEAVE	ARRIVE	LEAVE	ARRIVE
HYDE PARK TRAIN... 6:30 A. M.	7:45 A. M.	HYDE PARK TRAIN... 2:00 P. M.	2:15 P. M.
HYDE PARK TRAIN... 8:00 A. M.	9:15 A. M.	HYDE PARK TRAIN... 4:10 P. M.	4:25 P. M.
HYDE PARK TRAIN... 12:10 P. M.	1:25 P. M.		

\* Sundays Excepted.

W. P. JOHNSON, Gen. Pass. Agent.

M. HUGHITT, Gen. Supt.

# 1870. Great Central Route! 1870.

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## MICHIGAN CENTRAL and GREAT WESTERN RAILWAYS!

The Great Central Route, via Niagara Falls, to

**NEW YORK AND NEW ENGLAND.**

**Pullman's Magnificent Palace Drawing-Room Cars,**

— FROM —

**CHICAGO TO NEW YORK CITY, WITHOUT CHANGE.**

**4 PASSENGER TRAINS LEAVE CHICAGO, DAILY EXCEPT SUNDAY.**  
(DEPOT, FOOT OF LAKE STREET,) as follows:

**5:00 A. M. MAIL TRAIN.** Stops at all Stations.  
(SUNDAYS EXCEPTED.) Arrives DETROIT at 5:40 P. M.

**11:30 A. M. SPECIAL NEW YORK & BOSTON EXP.**  
(SUNDAYS EXCEPTED.) Arrives at Michigan City 1:15 P. M.; New Buffalo 1:30 P. M.; Niles 2:15 (Dinner); Kalamazoo 2:50 P. M.; Battle Creek 4:00; Marshall 4:45; Jackson 5:45; Detroit 7:55; London 12:05 A. M.; Hamilton 2:35 A. M.; Toronto 9:30; Suspension Bridge 3:55; Rochester 7:00 A. M.; Albany, 2:00 P. M.; NEW YORK, 6:25; BOSTON, 11:50 P. M. This train connects at ROCHESTER (7:00 A. M.) with

**Wagner's Magnificent Palace Drawing-Room Cars!**  
RUNNING THROUGH TO NEW YORK, WITHOUT CHANGE!

**5:15 P. M. ATLANTIC EXPRESS.**  
(DAILY.) Arrives at Michigan City, 7:15 P. M.; Niles 8:30 P. M. (Supper); Kalamazoo, 10:25 P. M.; Jackson, 1:00 A. M.; Detroit 3:40; London, 8:25 (Breakfast); Hamilton 11:40; Suspension Bridge 1:30 P. M.; Rochester 5:00 P. M.; Albany, 1:30 A. M.; NEW YORK, 6:40 A. M.; BOSTON, 11:00 A. M. A MAGNIFICENT DRAWING-ROOM SLEEPING CAR is attached to this train daily, FROM CHICAGO TO NEW YORK CITY. The celebrated

Hotel Drawing-Room Car is also attached to this Train from Chicago to Rochester!

These, together with ELEGANT DAY CARS TO SUSPENSION BRIDGE, make this Train the favorite Train for all points East.

**SPECIAL NOTICE.**—Boston and New England Passengers will please notice that this Train now makes direct connection through. A SLEEPING CAR is attached at Rochester at 5:20 P. M., running through to Springfield, Mass., thus avoiding transfer at Albany. Breakfast at Springfield. This Train reaches Springfield early enough second morning to Connect with all Trains up and down the Connecticut.

**9:00 P. M. NIGHT EXPRESS.**

(SAT. & SUN. EXCEPTED.) Arrives at Michigan City, 11:03 P. M.; Niles, 12:25 A. M.; Kalamazoo, 2:00; Marshall, 2:15; Jackson, 4:25; Grand Trunk Junction, 7:00; Detroit, 7:50; London, 1:45 P. M.; Hamilton, 4:35; Toronto, 9:35; Niagara Falls, 6:15; Buffalo, 7:15 P. M.; Rochester, 9:10; Syracuse, 12:35 A. M.; Rome, 1:55; Utica, 2:35; Albany, 6:30 A. M.; NEW YORK, 10:00 A. M.; BOSTON, 3:40 P. M.

**PULLMAN'S PALACE SLEEPING CARS ARE ATTACHED TO THIS TRAIN FROM CHICAGO TO DETROIT,**

And from Suspension Bridge to New York.

**WE INVITE THE ATTENTION OF THE TRAVELER to the SPLENDID EQUIPMENTS of this FIRST-CLASS LINE TO THE EAST!**

FOR THROUGH TICKETS, and any and all information, Sleeping Car accommodations, &c., apply at General Office in Tremont House Block, at office in Great Central Depot; also at No. 60 Clark street, under Sherman House; at Grand Trunk Railway Office, 48 Clark street, or at New York Central Railroad Office, No. 53 Clark street, and at office under Briggs House.

H. E. SARGENT, Gen. Supt. M. C. R. R.

W. K. MUIR, Gen. Supt. Gt. Western R. W.

HENRY C. WENTWORTH, Gen. Pass. Agt.

## CHICAGO, INDIANAPOLIS & LOUISVILLE THROUGH LINE!

— VIA —

**VIA MICHIGAN CENTRAL RAILROAD.**  
THE ONLY ROUTE TO  
**TO LOUISVILLE, WITHOUT CHANGE OF CARS.**

TWO EXPRESS TRAINS Leave Chicago Depot, Foot of Lake as follows:

**9:00 A. M. MORNING EXPRESS.**  
(EXCEPT SUNDAY.) Arriving at LaFayette, 2:25 P. M.; Indianapolis, 6:00 P. M.; Louisville, 11:30 P. M.

**4:30 P. M. AFTERNOON EXPRESS.**  
(EXCEPT SATURDAY.) Arriving at Michigan City 6:30 P. M. (Supper); LaFayette, 11:30 P. M.; Indianapolis, 2:15 A. M.; Louisville, 7:00 A. M.; Nashville, 4:00 P. M.

**A GOOD SLEEPING CAR is Attached to this Train Every Night,**  
And goes from Chicago to Louisville WITHOUT CHANGE!

**SPECIAL NOTICE.**—This Train stops at Michigan City for Supper, and waits at that point for Michigan Central Atlantic Express East, leaving Chicago at 4:45 p. m. Passengers going South, and wishing as much time in Chicago as possible, can take the 4:45 p. m. Michigan Central Atlantic Express, and connect without fail at Michigan City, with above Through Louisville Express.

**THE GREAT BRIDGE ACROSS THE OHIO** at Louisville being completed, passengers are relieved of the omnibus transfer.

**FOR THROUGH TICKETS,** via this line, apply at offices of connecting lines and at all Ticket offices in Chicago.

HENRY C. WENTWORTH, Gen. Pass. Agent.

## Michigan Central R. R. LOCAL CONNECTIONS:

**Chicago & Michigan Lake Shore Railroad.**

Open from New Buffalo to St. Joseph, Mich.

**5:00 A. M. AND 4:30 P. M. Trains from Chicago Connect at New Buffalo.**

**Kalamazoo, Allegan & Grand Rapids R. R.**

Open to Grand Rapids.

**11:30 A. M. AND 9:00 P. M. Trains from Chicago Connect at Kalamazoo.**

**Peninsular Railroad of Michigan.**

Open to Charlotte.

**5:00 A. M. AND 9:00 P. M. Trains from Chicago Connect at Battle Creek.**

**Jackson, Lansing & Saginaw Railroad.**

Open to Bay City, Mich. Passing through Lansing and Saginaw.

**5:00 A. M. AND 9:00 P. M. Trains from Chicago Connect at Jackson.**

## GRAND TRUNK RAILWAY.

All Michigan Central Trains Connect at Grand Trunk Junction

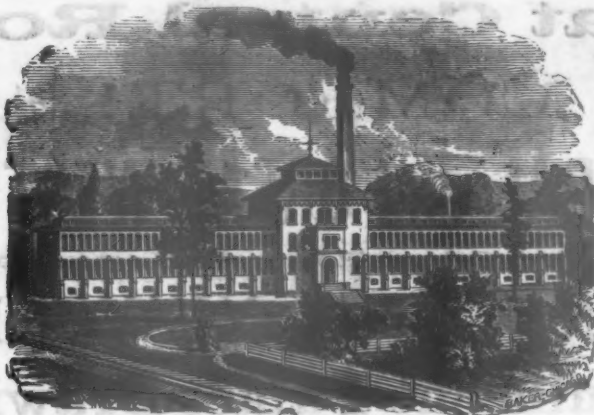
— FOR —

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AND ALL POINTS EAST.

H. E. SARGENT, General Superintendent.

## Elgin Watches!



## Elgin Watches!



MANUFACTURED BY

## THE NATIONAL WATCH COMPANY.

OFFICE GEN'L SUP'T U. P. R. R.  
OMAHA, Neb., Dec. 16, 1869.  
HON. T. M. AVERY, Esq., President National Watch Co.,  
Chicago, Ill.

Dear Sir—During the months that I have carried one of your E. W. Raymond Watches, it has not failed to keep the time with so much accuracy as to leave nothing to desire in this regard.  
For accuracy in time keeping, beauty of movement and finish, your watches challenge my admiration and arouse my pride as an American, and I am confident that in all respects they will compete successfully in the markets of the world with similar manufactures of older nations. They need only to be known to be appreciated.

Yours, most respectfully,  
C. G. HAMMOND, Gen. Supt.

OFFICE OF GEN'L SUP'T H. R. R. R.  
NEW YORK, Jan. 17, 1870.

M. AVERY, Esq., President National Watch Co.  
Dear Sir—The Watch made by your Company, which I have carried the past two months, has kept excellent time. I have carried it frequently on engines, and have been on the road with it almost daily. During this time it has run uniformly with our standard clock. Truly yours,  
J. M. TOUCET.

PRINCE R. R. Co., GEN. SUP'T OFFICE,  
ALBANY, N. Y., Jan. 19, 1870.  
T. M. AVERY, Esq., President National Watch Co.,  
Chicago.

Dear Sir—This Company has purchased and put in the hands of its engine-men, eighty "Raymond movements," which have given excellent satisfaction and proved to be very reliable time-keepers. In addition to these, quite a number of Elgin Watches have been purchased by officers and employees of this Company, all of whom have been well pleased with the efficiency and regularity of the movements manufactured by the National Watch Company. Respectfully,  
EDWARD H. WILLIAMS,  
General Superintendent.

AMERICAN MERCHANTS' UNION EXPRESS CO.,  
CHICAGO, Feb. 17, 1870.  
T. M. AVERY, Esq., President National Watch Co.,  
Chicago, Ill.

Dear Sir—It gives me pleasure to state that the two or three Elgin Watches I have at different times purchased for presentation have given entire satisfaction, and are highly valued as elegant and correct time-keepers.  
A very large number of your Watches are being carried by the Messengers in the employ of this Company, and are giving entire satisfaction, their time-keeping qualities being implicitly relied upon.  
CHAS. FRISCO.

MICHIGAN CENTRAL R. R. Co.,  
CHICAGO, Jan. 18, 1870.

T. M. AVERY, Esq., President National Watch Co.:  
Dear Sir—I have now been carrying one of your Elgin Watches, of the E. W. Raymond pattern, for nearly five months, and it affords me much pleasure to testify in favor of its time-keeping qualities, in which, after this length of time, I have great confidence. It has from the first run very close to the standard time, the slight variation being uniform, and susceptible of correction by careful regulation. My experience thus far justifies the opinion that it is a very safe and reliable time-keeper.  
Respectfully yours,  
H. E. SARGENT.

OFFICE OF THE GEN. SUP'T C. & N. W. R. R.,  
CHICAGO, Feb. 16, 1870.

T. M. AVERY, Esq., President National Watch Co.:  
Dear Sir—I have pleasure in expressing my opinion of the Elgin Watches, the more so since I do not think there is a better watch made. A large number of them are in use by our conductors and engine-men, and other employees, and I have heard no dissenting opinion upon their merits. They run with a smoothness and uniformity fully equal to any other watch I know of, and justify all your claims of excellence in manufacture and fitting of parts.  
Yours, truly,  
GEO. L. DUNLAP, Gen'l Sup't.

LAKE SHORE & MICHIGAN SOUTHERN R. R.,  
CHICAGO, Jan. 27, 1870.

T. M. AVERY, Esq., President National Watch Co.:  
Dear Sir—I have carried the Elgin Watch long enough to be able to pronounce it a first-rate time-keeper. I am making a very careful test of its performance and will soon give you the results. I think it will show that the West can produce Watches equal to the manufacture of any part of the world.  
Yours, truly,  
E. B. PHILLIPS,  
President L. S. & M. S. R. R. Co.

OFFICE GEN. SUP'T Erie RAILWAY,  
NEW YORK, Feb. 7, 1870.

T. M. AVERY, Esq., President National Watch Co.,  
Chicago, Ill.:  
Dear Sir—Having for about three months tested, in various ways, the "time-keeping" qualities of one of your Elgin Watches, I most cheerfully award it the praise that it is due. For one month the Watch was carried by one of our Locomotive Engineers, and since by different persons, so that its full value as a time-keeper could be known under different modes of treatment. I will simply say that it has given perfect satisfaction, and in my opinion is as near perfection as I believe it possible a Watch can be made.  
Respectfully yours,  
L. H. ROCKER,  
General Superintendent.

No Movements Retained  
by the Company.

Business Office and Salesroom of the National Watch Company, Nos. 159 and 161 Lake Street, Chicago.

## JACOB R. SHIPHERD &amp; CO.,

155 and 157 LaSalle Street,

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